SJSU Research Foundation
2024 Annual Report

SAN JOSÉ STATE UNIVERSITY
DIVISION OF RESEARCH AND INNOVATION

Mákkin Mak Muwekma,
'Akkoy Mak-Warep, Manne Mak Hiswi!

We Are Muwekma Ohlone,
Welcome To Our Ancestral Homeland!

The San José State University community recognizes that the present-day Muwekma Ohlone Tribe, with an enrolled Bureau of Indian Affairs documented membership of over 550, is comprised of all of the known surviving American Indian lineages aboriginal to the San Francisco Bay region who trace their ancestry through the Missions Santa Clara, San José, and Dolores, during the advent of the Hispano sEuropean empire into Alta California; and who are the successors and living members of the sovereign, historic, previously Federally Recognized Verona Band of Alameda County.

Furthermore, the San José State University community recognizes that the university is established within the Thámien Ohlone-speaking tribal ethnohistoric territory, which based upon the unratified federal treaties of 1851-1852, includes the unceded ancestral lands of the Muwekma Ohlone Tribe of the San Francisco Bay Area. Some of the enrolled Muwekma lineages are descended from direct ancestors from the Thámien Ohlone tribal territory whose ancestors had affiliation with Mission Santa Clara.

The San José State University community also recognizes the importance of this land to the indigenous Muwekma Ohlone people of this region, and consistent with our principles of community and diversity strives to be good stewards on behalf of the Muwekma Ohlone Tribe whose land we occupy.

The numbers and statistics presented in this report are limited to the activity managed by the San José State University Research Foundation and are not representative of the overall research expenditures of the larger institution as there are programs funded directly by the institution or through the Tower Foundation.

The annual report also reflects award activity or gross sponsor commitments recorded in the fiscal year. The audited financial statements reflect fiscal year expenses on sponsored awards. In many cases, expenses are actually lower than the award activity because of multi-year awards, which are recorded in their entirety when received but expended over multiple years.

COVER: Dr. Bo Yang, Assistant Professor in the Department of Urban and Regional Planning at the College of Social Sciences, pilots one of the drones he and his team use to map and monitor seagrass.

THIS PAGE: Dr. Madalyn Radlauer, Associate Professor in the Department of Chemistry at the College of Science, during a tour of the recently opened $181M Interdisciplinary Science Building, which boasts space for collaborative science, teaching, and research.

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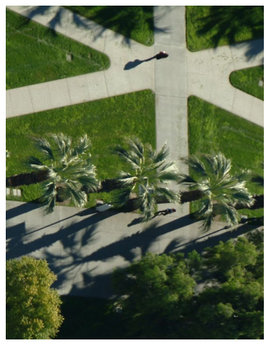
ABOUT

The San José State University Research Foundation is a nonprofit 501(c)(3) California corporation that operates solely for the benefit of San José State University. It is an “auxiliary” of San José State University.

Auxiliary organizations at the California State University (CSU) are nonprofit organizations and separate legal entities. They operate pursuant to written operating agreements with the CSU Board of Trustees, have separate governing boards with close connections to a campus, and follow all legal and policy rules established by the CSU system and the respective campus administration.



Auxiliary organizations were created to perform essential functions associated with a post-secondary educational institution, which under California law were difficult, cumbersome, or legally restricted for the university and were not supported by state funding.

The entire team at the SJSU Research Foundation continues to be inspired by the endeavors and accomplishments of SJSU researchers. We are committed to supporting their efforts through our dedication to providing streamlined, robust, and efficient research administration systems and services.

LEADERSHIP

Mohamed Abousalem

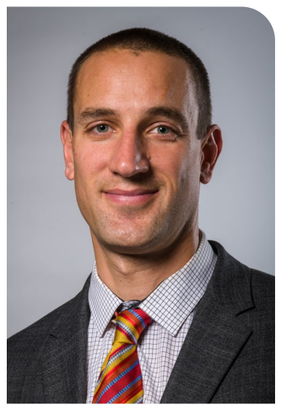
President
SJSU Research Foundation
Board of Directors

Vice President
Research and Innovation
San José State University

Richard Mocarski

Vice President
SJSU Research Foundation
Board of Directors

Associate Vice President
Research
San José State University



Andrew Exner

Executive Director
SJSU Research Foundation

Board Secretary
SJSU Research Foundation
Board of Directors

The San José State University (SJSU) research, scholarship, and creative activities (RSCA) enterprise continued its upward growth in the 2022-23 fiscal year. We are pleased to report nearly $52 million in total research expenditures at the San José State University Research Foundation, thanks to the hard work of our faculty, staff, students, and researchers. This represents a six percent increase over the previous year. Total research expenditures across the institution grew to $83.4M in the same year, representing a 16% increase over the previous year.

While we continue to measure those numbers and take pride in reporting them, the real impact of this growth comes in the impact these funds have on our faculty, students, and broader community. Furthermore, when considering SJSU’s designation as a federally-recognized minority-serving institution (both as a Hispanic-Serving Institution ‘HSI’ and an Asian American and Native American Pacific Islander ‘AANAPISI’), with 28% first-generation college students, RSCA growth at SJSU has an outsized impact on creating pathways for equity and justice. SJSU is also ranked first in the nation in research activity among all non-PhD granting institutions. One of our focuses is on the student experience and giving our students every opportunity to engage in research while supporting the professional development of our faculty through scholarship, research, and creative activities.

We continue to drive RSCA activities (and expect more growth) as we engage more faculty and concentrate our efforts on research clusters that promote interdisciplinary ventures in Artificial Intelligence (AI)/ Machine Learning (ML), semiconductors, healthcare, climate change and coastal resilience, along with social justice. Many examples of externally funded projects in these focus areas are reflected in the pages ahead. We look forward to working in these and other areas of growth and strength across the SJSU RSCA enterprise.

Our support for the SJSU Office of Innovation is expanding as it grows the size of the SJSU intellectual property portfolio. The SJSU SpartUp entrepreneurship support program has also grown by leaps and bounds, and the Research Foundation is proud to host the Silicon Valley Small Business Development Center, which engaged with hundreds of clients and supported tens of millions of dollars in economic activity for the region this past fiscal year.

We continue to leverage our status as an auxiliary organization within the California State University system to provide service to SJSU in the areas of grant proposal and award management, competitive faculty fellowships, RSCA-related agreements, intellectual property support, and academic self-support programs. Our culture of service to SJSU faculty, student, and staff researchers, our employees, and external partners is helping ensure the public impact of SJSU’s Research and Innovation enterprise in our local and global communities.

As you read through the annual highlights for the SJSU Research Foundation and explore the social, economic, and environmental aspects of these projects, we hope you gain a great sense of their incredible impact, which we have the privilege of administering on behalf of SJSU.

NUMBERS

SJSU Research Foundation numbers for
Fiscal Year 2022–23, which ended on June 30, 2023

266
Awards
received valued
at more than
$63 MILLION

356
Proposals
submitted valued at
more than **$194 MILLION**
(238 FACULTY)

224 SJSU
Faculty
engaged in sponsored research projects, grants, or contracts, managed by the Research Foundation.

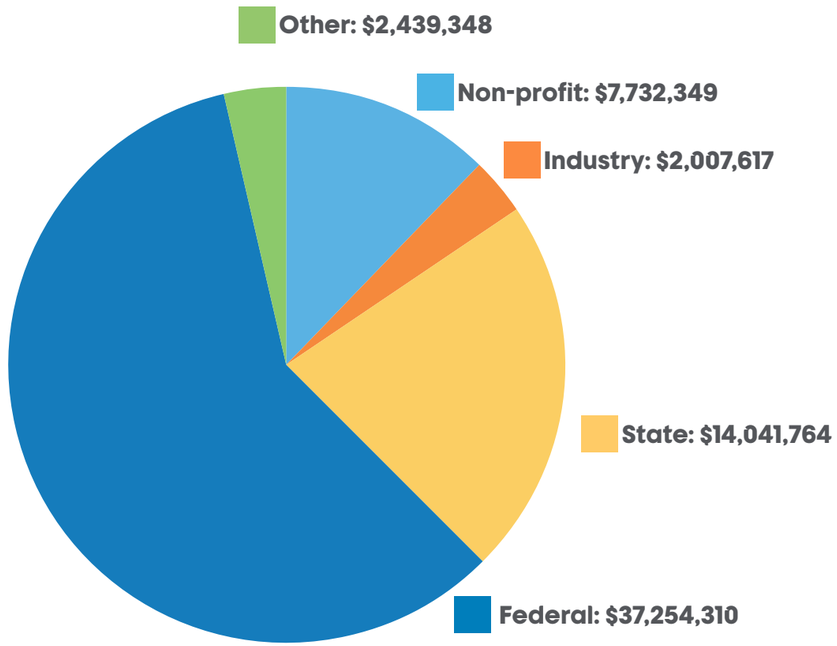
$52
Million
in research expenditures
across 551 active projects.

624 SJSU
Students
engaged in sponsored research projects, grants, or contracts managed by the Research Foundation.

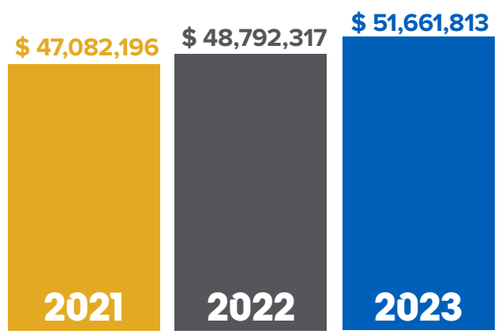
$2.04
Million
returned to San José State
University in indirect revenue.

357 SJSU
Project Staff
engaged in sponsored research projects, grants, or contracts, managed by the Research Foundation.

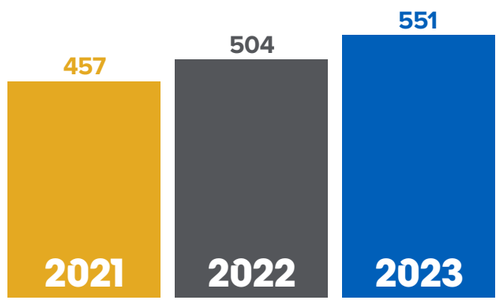
FISCAL YEAR 2022-2023 AWARDS

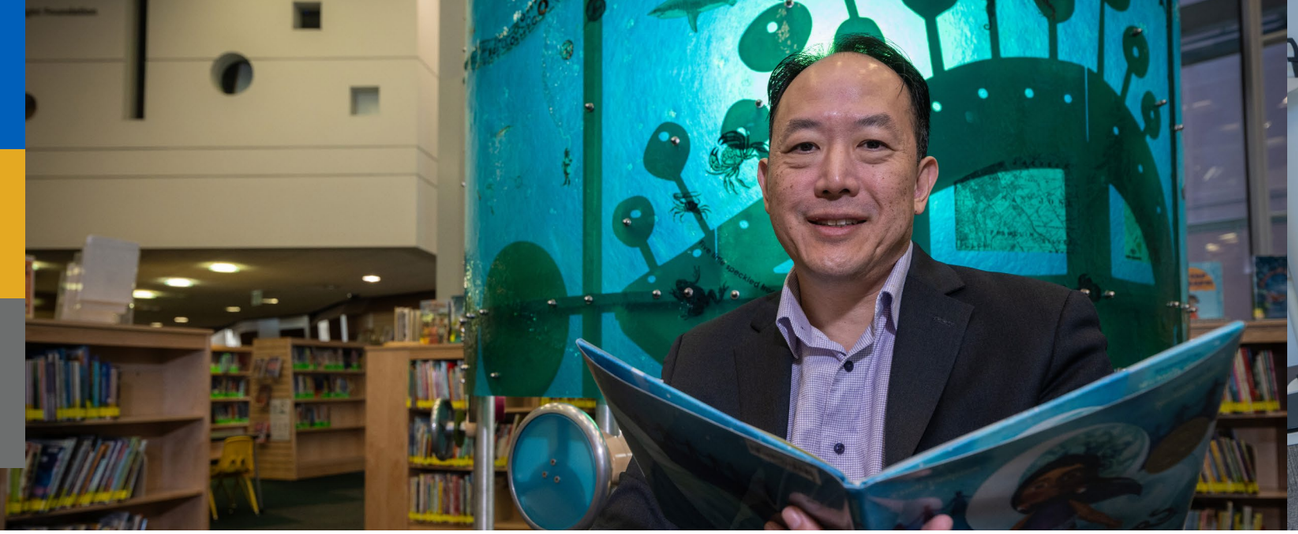


Sponsored Programs Expenditures



Number of Awards





Dr. Anthony Chow is an Associate Professor and Director of the School of Information at the Lucas College and Graduate School of Business. His research on Reading Nation Waterfall: Increasing Access to Literacy and Libraries for Native American Children and Families, aims to increase the reading proficiency of children in kindergarten through fourth grades and promote reading and literacy in Native American households, as well as encourage the use of libraries in areas where Native families live.

Anthony Chow

Fostering a Love of Reading Through Books and Libraries in Native American Communities

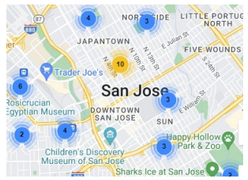
Dr. Anthony Chow, Associate Professor and Director of the School of Information, imagines an endless river of books circulating through Native American communities for children and families. The vivid imagery is reflected in his federally funded research project “Reading Nation Waterfall: Increasing Access to Literacy and Libraries for Native American Children and Families.”

“Our goal is to increase access to books, literary sources, and libraries for Native American children and families,” he says. “We are working to increase reading proficiency from kindergarten to 4th grade, promote reading and literacy in Native American households and encourage the use of libraries in areas where Native families live.”

San José State University is working with five tribes across four states: the Yurok of California, the Santo Domingo of New Mexico, the Northern Cheyenne of Montana, and the Eastern Cherokee and Lumbee of North Carolina as part of this three-year project. To date, over 8 thousand books have been disseminated to the tribes in Year 1 of the project.

“Our SJSU students help gather and analyze data, work with members of the tribes and serve as the heart and soul of the project through their hard work and dedication,” he adds. Working on funded research projects contributes to the quality of education for our students. A strong team comprised of faculty and students are working together to develop book ecosystems that help create the conditions for sustainable streams of books and library services that lead to a cascading waterfall of culturally relevant books for Native American children.

Dr. Chow, during a July 2021 visit to the Eastern Band of Cherokee Indians in Cherokee, NC. From this visit alone, over 150 books were distributed to the children in the community.



A Geographic Information Services (GIS) map showing the number of Free Little Libraries near the SJSU campus. Find a Free Little Library near you at littlefreelibrary.org/map. Image courtesy of Google and Free Little Library.

Dr. Chow’s father, Dr. Chak Chow, unexpectedly passed away during the writing of this article. Donations to the Little Free Library of the Eastern Band of Cherokee Indians Qualla Boundary Head Start programs can be made by scanning this QR code with the camera on your phone.

Reading Nation Waterfall· Increasing Access to Literacy and Libraries for Native American Children and Families

Institute of Museum and Library Services

Award(s): $633,305
as of January 19, 2024

Dr. Aruem Jensen prides herself on the professional and transferable kinesiology research skills student researchers gain while working in her lab. Student researchers Olivia Bozzo, ‘25 Kinesiology, Stephanie Wang, ‘24 MS Kinesiology (Exercise Physiology), Blake Mcmullen, ‘24 Kinesiology, and Yusuf Rizk, ‘24 Kinesiology, conduct a test on fellow student researcher Jacob Sievers, ‘25 Kinesiology, using the lab’s lower body negative pressure chamber, which simulates gravitational stress on the body.

Areum Jensen

Examining the Link Between Autism Spectrum Disorder and Cardiovascular Health

Dr. Areum Jensen is intrigued by a baffling medical question: Why do individuals with neurological disorders, like autism spectrum disorder (ASD), experience a higher incidence of hypertension and cardiovascular disease than the general population?

She is an Associate Professor in Clinical Exercise Physiology in the Department of Kinesiology at the College of Health and Human Sciences. A recent U.S. National Institute of Health (NIH) research grant is providing her and her SJSU student researchers with the opportunity to find answers to this perplexing question.

“We hope to identify pathophysiology of early hypertension and cardiovascular disease in individuals with ASD. This will form the basis for future experimental and clinical studies to determine an effective therapeutic target, enable improved patient care and ultimately enhance the quality of life for individuals with ASD,” and “I hope that exercise becomes an important aspect for the future treatment.”

As principal investigator, she mentors her student researchers on how to properly use equipment, measure variables correctly, conduct experiments, follow specific protocols, write abstracts, compile literature, and present final results in a professional manner.

For Dr. Jensen and her student researchers, this is not about exploring some abstract concept. It’s an urgent question to be answered. ASD is one of the fastest-growing pediatric disorders, occurring in approximately 1 in 36 children according to Centers for Disease Control and Prevention.

The Role of Sympathetic Nervous System Activity on Blood Pressure Regulation in Individuals with Autism Spectrum Disorder

National Institute of Health

Award(s): $279,250
as of January 19, 2024

With their fellow student researcher Jacob Sievers, ‘25 Kinesiology, situated in the lab’s lower body negative pressure chamber, Yusuf Rizk, ‘24 Kinesiology, and Blake Mcmullen, ‘24 Kinesiology, are guided by Dr. Jensen.

Dr. Jensen is an Associate Professor of Clinical Exercise Physiology in the Department of Kinesiology at the College of Health and Human Sciences. Her work explores why individuals with neurological disorders, like autism spectrum disorder (ASD), experience a higher incidence of hypertension and cardiovascular disease than the general population.

Dr. Bo Yang (center) is an assistant professor of Geographic Information System (GIS) in the Department of Urban and Regional Planning at the College of Social Sciences. Dr. Yangand student researchers on campus with one of the drones they use to map the changes in seagrass health, giving a detailed view of its health and changes over time. Dr. Yang's group trains students, especially from minority institutions and community colleges, in skills like drone piloting, mapping, and coastal science. This hands-on education not only prepares them for careers in science, but it also contributes to better coastal management and seagrass conservation.

Bo Yang

UAV Mapping for Seagrass and Coastal Conservation in Northern California

Dr. Bo Yang and his team would like everyone to appreciate how important seagrass is to the Northern California coastal environment. With support from the National Science Foundation, he and his team of student researchers are using Unmanned Aerial Vehicle (UAV, or drone) mapping to gather the data needed to protect these vital ocean ecosystems.

Yang is an assistant professor in the Department of Urban and Regional Planning of the College of Social Sciences. "We are using advanced UAV mapping, along with a machine learning algorithm to calculate variations in the health of the seagrass, and then building a cloud-based data hub to manage the data we collect," he says.

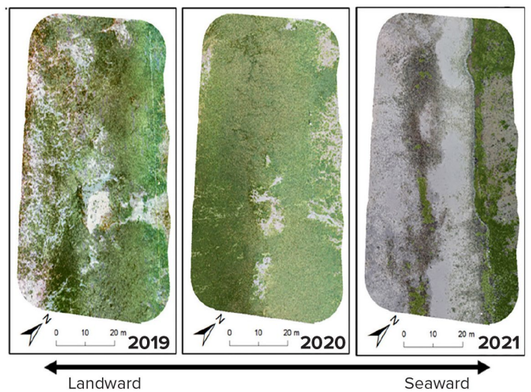
Over several summers, he has led teams to map multiple sites along the U.S. West Coast. They have gathered an impressive collection of more than 20 thousand UAV remote-sensing images of intertidal areas. Their field research has ranged from Mission Bay in San Diego, California all the way north to Alaska's Prince of Wales Island.

"SJSU students have benefited by working alongside faculty and gaining experience in drone flight data collection, as well as GIS analysis," he says. "Such fieldwork demands patience, persistence, and focus. Students gain cutting-edge technology skills and an in-depth understanding of operating drones, image analysis, and conducting geographical fieldwork."

Building a STEM Research and Education Network of GIS and Drone Mapping for Coastal Seagrass Monitoring

National Science Foundation

Award(s): $356,086
as of January 19, 2024



A side-by-side drone photo comparison, taken by Dr. Yang's research team, shows the loss of the coastal seagrass habitat off the San Juan Islands in Washington state.

With community engagement at the forefront of SJSU's Healthy Development Community Clinic's mission, Dr. Cara Maffini (third from the left), Associate Professor in the Department of Child & Adolescent Development at the Lurie College of Education, recently hosted an event for the following individuals and entities to raise awareness of the clinic's offerings to the community: United States Representative Jimmy Panetta, SJSU University President Cynthia Teniente-Matson, East Side Union High School District, and Oak Grove High School administrators and social-work providers, SJSU students, alumni, SJSU Vice President of the Division of Research and Innovation Dr. Mohamed Abousalem, and Dean of the Connie L. Lurie College of Education and Interim Vice Provost of Undergraduate Education Dr. Heather Lattimer.

Cara Maffini

Ensuring Quality Healthcare Services for Families in the San José Community

One look at Dr. Cara Maffini's professional titles, you begin to appreciate the broad scope of her work. She is an associate professor in the Department of Child and Adolescent Development of the Connie L. Lurie College of Education and the faculty director at the Healthy Development Community Clinic, Oak Grove High School in the East Side Union High School District in San José, CA.

Dr. Maffini's work focuses on ensuring quality healthcare services for families in the San José community. A current project, "Culturally-Responsive Wellness and Communication Interventions: Healthy Development Community Clinic," fits this profile. It was made possible with support from the Santa Clara Family Health Plan.

"SJSU's Healthy Development Community Clinic (HDCC) provides services that support holistic wellness for children, youth, and families," Dr. Maffini says. This includes vital screening, short-term interventions, and referral services to address the behavioral health, speech, and language needs for many community residents.

Dr. Maffini points to the active involvement of SJSU student project assistants who work closely with faculty to deliver services and conduct research for HDCC. Faculty that includes her HDCC co-founders and partners Dr. Nidhi Mahendra, associate professor, of the Department of Communicative Disorders and Sciences in the Connie L. Lurie College of Education, and Dr. Matthew Capriotti, associate professor of the Department of Psychology in the College of Social Sciences at SJSU.

Culturally-Responsive Wellness and Communication Interventions· Healthy Development Community Clinic

Santa Clara Family Health Plan

Award(s): $250,000
as of January 19, 2024

SJSU
HEALTHY
DEVELOPMENT
COMMUNITY
CLINIC

Dr. Christopher Luna-Mega is an Assistant Professor of Composition, Theory, and Electronic Music in the School of Music and Dance at the College of Humanities and the Arts. His work focuses on instrumental and electronic music that derives from acoustic features of environmental sound, as well as from patterns of environmental data, resulting in translation, transcription and orchestration of natural and anthropogenic sound and data.

Listen to an excerpt of Dr. Luna-Mega's one-day downtown San José concert and sound installation on YouTube by scanning this QR code with the camera on your phone.

Christopher Luna-Mega

Learning to Appreciate Soundscape Ecology in an Urban World

Dr. Christopher Luna-Mega is an assistant professor in composition, electronic music, and theory in the School of Music of the College of Humanities and the Arts. His work invites us to appreciate the sublime quality of the soundscapes that surround us every day as we go about our daily routines.

"I describe my work as environmental sonic translation," Professor Luna-Mega explains. "It is instrumental and electronic music that derives from acoustic features of environmental sound and patterns of environmental data. It results in translation, transcription, and orchestration of natural sound and data into music."

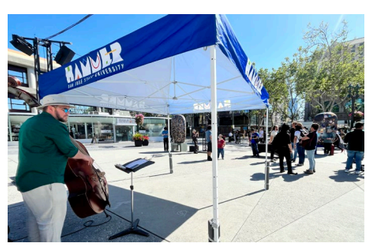
His avant-garde approach to composing with the sounds that surround us was on display at a recent, one-day event — Downtown Soundscapes — held in San José, CA. The music event combined a sound installation (composed collaboratively by his Electronic Music II students under his direction) with live instrumental performance on behalf of four faculty members from the School of Music. The majority of the electronic and instrumental sounds were derived from the students' audio recordings of the soundscape in downtown San José, such as the sounds of the light rail, traffic noise, skateboards, conversations, construction, birds, etc. The event was held at the Paseo de San Antonio, where an immersive four-channel speaker system surrounded the audience and pedestrians walking through the space.

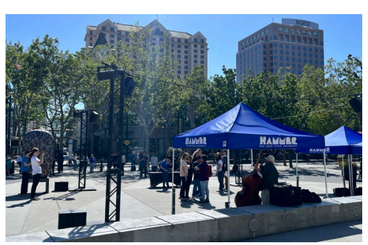
Professor Luna-Mega also points to the active involvement of his Music Technology and Composition students with environmental sound and data as the source material for compositions performed at events he has produced in the San José community. "These events have introduced our music students to new, cutting-edge ideas about music, sound, and interdisciplinary collaboration."

Downtown Soundscapes

San José Downtown Association

Award(s): $5,000
as of January 19, 2024





Photos of performers, attendees, and sound mixing station from the May 22, 2023, Downtown Soundscapes held at the Plaza de San Antonio outside of the Hammer Theatre Center and near the SJSU campus. The goal of the project is to increase awareness of the impact good or poor sound environments can have in a city and its neighborhoods

Dr. Farzan Kazemifar is an Associate Professor in the Department of Mechanical Engineering at the Charles W. Davidson College of Engineering. His work identifies energy-saving opportunities in manufacturing facilities and commercial buildings — helping businesses reduce their energy cost and carbon footprint.

Farzan Kazemifar

Helping California Manufacturing Facilities Reduce Their Energy Costs and Carbon Footprint

Farzan Kazemifar, Associate Professor, Department of Mechanical Engineering, Charles W. Davidson College of Engineering, has an ambitious energy reduction approach. Dr. Kazemifar and his engineering students engage California business owners with manufacturing sites in an effort to help them reduce energy costs and carbon footprint.

The effort is part of a project funded by the U.S. Department of Energy. "Our goal was to establish an Industrial Assessment Center at SJSU," Professor Kazemifar says. The center trains SJSU students to be energy engineers trained to do on-site assessments to help manufacturing businesses reduce energy consumption and costs and carbon footprint.

"My team at the SJSU Industrial Assessment Center includes Dr. Crystal Han from the Department of Mechanical Engineering and Dr. Anil Kumar from the Department of Industrial Systems Engineering. They serve as assistant directors for the Center." Professor Kazemifar and his team have conducted energy audits at 13 manufacturing facilities to date.

Dr. Kazemifar notes that since no two manufacturing facilities are the same, every site brings a unique set of challenges for the team to solve using real-world engineering knowledge and experience. He credits the campus Central Plant staff as a resource for training students on the large mechanical equipment they'll see during site visits.

Their efforts have yielded real results. Professor Kazemifar's team has identified $1M+ of potential energy savings to date, which is all part of the effort to reduce energy costs and carbon footprints at manufacturing sites in Northern and Central California, so factories can operate more efficiently and improve overall air quality.

Establishing an Industrial Assessment Center at San José State University

United States Department of Energy

Award(s): $1,399,940
as of January 19, 2024

Pictured is part of the maze of equipment at SJSU's Central Plant, where Dr. Kazemifar studies the mechanical systems and energy consumption of the Engineering Building to identify energy-saving opportunities. Students from the Industrial Assessment Center visit similar sites throughout California, where they gain real-world experience by working directly with clients, participating in energy audits, collecting data, conducting engineering analyses, and furnishing written reports on findings.

Dr. Gheorghi Guzun is an Assistant Professor of Computer Engineering in the Department of Computer Engineering at the Charles W. Davidson College of Engineering. His research is at the intersection of data management and machine learning, which includes algorithm optimization for machine learning, energy efficiency in data-intensive applications, data compression and quantization. The efficiencies and optimizations he discovers lead to energy and time savings — including the generation of new applications.

Gheorghi Guzun

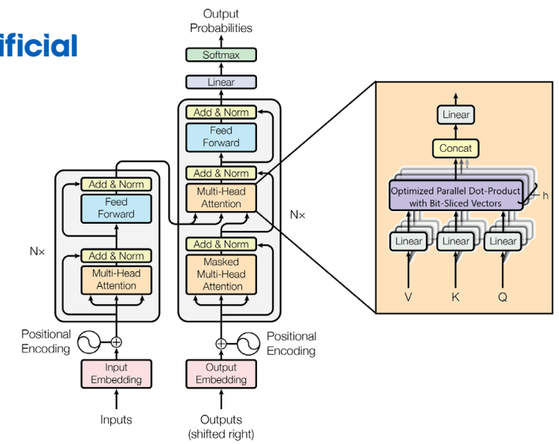
Taking on the Challenge of Making Artificial Intelligence Processing More Efficient

Dr. Gheorghi Guzun is taking on the challenge of making artificial intelligence data processing more efficient and less costly in terms of time spent and energy consumed. He is an Assistant Professor of Computer Engineering in the Department of Computer Engineering in the Charles W. Davidson College of Engineering.

According to Dr. Guzun, Artificial Intelligence (AI) is now achieving machine accuracy higher than human accuracy on many cognitive tasks like image selection, language processing, and protein structures, but there is a downside given the high energy consumption needed to do the intense data processing required to achieve the desired results."

To address this problem, Dr. Guzun oversees student researchers leveraging data sparsity, novel data quantization, encoding and compression algorithms, and integrating them within existing AI systems. All with the goal of enabling data-intensive applications on computing platforms that do not have to be powerful and expensive to run.

In the Guzun Lab, graduate students get much-needed exposure by working on advanced AI research projects. Some graduate students go on to pursue doctoral degrees. All of which helps them land quality tech jobs after graduation in this fast-growing field. A field that Dr. Guzun believes we are only now starting to appreciate in terms of overall impact.



An example of vector operation optimization integration within a deep neural network transformer architecture. The left side represents an example of a neural network transformer architecture, and the right side shows the Dr. Guzun Laboratory's contribution, where they optimize vector operations such as dot-products through novel quantization and compression approaches. Image courtesy of Dr. Gheorgi Guzun.

Scalable and Adaptable Sparsity-driven Methods for More Efficient AI Systems

National Science Foundation

Award(s): $211,590
as of January 19, 2024

Kate Wilkin

Rekindling the Lost Art and Science of Prescribed Fires

The science of prescribed burns on natural lands is not widely understood, especially due to changes in land management and climate change. Management practices that worked more than 50 years ago may no longer work due to how much natural areas have changed. Consequently, the question is how do we move forward: what are good land management practices to use to accomplish goals. Dr. Kate Wilkin would like to help land managers understand how to move forward.

As an Assistant Professor of Fire Ecology in the Department of Biological Sciences at the College of Science, Dr. Wilkin proposes, "One solution to California's wildfire problem is to burn the fuel under favorable conditions like prescribed fires. We want to understand if prescribed fires are removing fuels and promoting natural benefits."

Dr. Kate Wilkin, Assistant Professor of Fire Ecology, in the Wildfire Interdisciplinary Research Center (WIRC) at the College of Science, with some of the gear used to initiate, monitor, and study the effectiveness of prescribed burns. The Wilkin Research Lab provides student researchers the opportunity to collaborate with land management experts, who share their expertise in wildfire science, management and modeling, remote sensing, combustion, and meteorology.

SJSU Prescribed Fire Monitoring and Research Program in the Central Coast

California Department of Forestry and Fire Protection

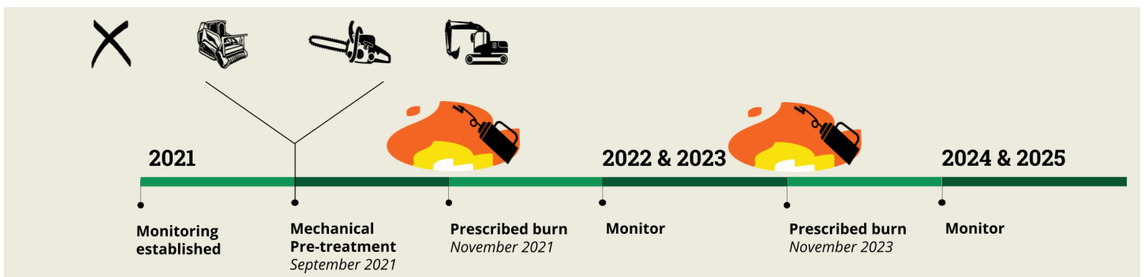
Award(s): $396,601
as of January 19, 2024

Benefits such as restoring critical coastal prairie habitat. "Having studied this for years, I understand how fire is a critical process that sustains ecosystems here in California and where I grew up in Appalachia," Wilkin says. "Furthermore, I'm excited to help rekindle the lost art and science of prescribed fires."

The Wilkin project, Prescribed Fire Monitoring and Research Program in the Central Coast, is funded by the California Department of Forestry and Fire Protection. One goal of the project is to promote the active involvement of students traditionally underrepresented in natural resource management.

In the Wilkin Research Lab, seventeen student researchers collaborate with experts in the field of land management. They share expertise in wildfire science, management and modeling, remote sensing, combustion and meteorology. Moreover, they assist in rekindling the ancient art of controlled burning, restoring forests, and cultural burning practices.

Dr. Wilkin (second from the left) and a portion of the Central Coast Prescribed Fire Monitoring Program 20-person team on a recent prescribed burn at Wilder Ranch State Park in Santa Cruz, CA, as California State Parks starts the prescribed burn. Moments later, fire behavior and weather teams jumped into action to collect data. Photo courtesy of Henri Brillon and a cinematic drone used to study the effectiveness of prescribed burns.



A timeline describing the methods and stages of a prescribed burn over the course of four years.

Dr. Kezban Yagci Sokat, Assistant Professor in the Department of Marketing and Business Analytics at the Lucas College and Graduate School of Business, focuses her research on methods to mitigate human trafficking. Her partnership with the Valley Transportation Agency and the Mineta Transportation Institute aims to give riders a mechanism to report suspected human trafficking.

Kezban Yagci Sokat

Thwarting Human Trafficking Using Analytics

Dr. Kezban Yagci Sokat believes in the power of business analytics to reduce the incidence of human trafficking in urban areas and to gain a greater understanding of how citizens and transit departments can be more effective in helping law enforcement.

As an assistant professor in the Department of Marketing and Business Analytics within the Lucas College and Graduate School of Business, Dr. Yagci Sokat is currently serving on the United States Department of Transportation Advisory Committee on Human Trafficking Research and Data Subcommittee — a very rare federal appointment for a researcher.

One of Yagci Sokat's research endeavors aims to make a difference in the lives of human trafficking victims: a collaborative effort involving the Valley Transit Authority (VTA), which is integrating guidelines from the Homeland Security Exercise and Evaluation Program to thwart human trafficking on its public transportation system, and the Mineta Transportation Institute (MTI), a research institute specializing in the intricacies of multimodal surface transportation policy and management. Dr. Hilary Nixon, deputy executive director at MTI, spearheads this research initiative as the principal investigator (PI), while Dr. Yagci Sokat, Co-PI, contributes extensive expertise in the analytics of human trafficking.

"The Homeland Security Exercise and Evaluation Program guidelines are used to evaluate the effectiveness of VTA's human trafficking prevention programs," Dr. Yagci Sokat says. "SJSU students are participating in exercises designed to simulate transit ridership activity in instances where passengers utilize the VTAlerts mobile app to report suspected human trafficking."

The idea is to measure the effectiveness of communication campaigns designed to raise passenger awareness, how riders respond using the VTAlerts app, and the notifications to VTA staff and law enforcement. The findings of this project will be included in the VTA's final report to the Federal Transit Administration. Dr. Yagci Sokat believes this effort will lead to a model for enhanced citizen participation in combating human trafficking in urban areas and help to change the lives of human trafficking victims.

Not on Transit (NoT) Project

Santa Clara Valley Transportation Authority

Award(s): $159,998
as of January 19, 2024

The large-scale "Not on Transit" project artwork covers nearly an entire VTA light rail train and features a website and telephone number to report suspected human trafficking on the VTA system. The project artwork can be found on light rail trains and buses throughout the VTA fleet.

A notice displayed within a VTA bus is utilized to inform VTA riders about the various methods they can use to report suspected cases of human trafficking.

Dr. Mantra Roy, Carlie Lowe, Jane Dodge, and Karla Alvarez. Not pictured: Dr. Michele Villagran, Vidya Kilambi, Sylvia Ruiz and Hyokyung (Carrie) Hwang.

BIPOC Become Librarians (BBL)

Institute of Museum and Library Services

Award(s): $150,000
as of January 19, 2024

Mantra Roy, Jane Dodge, Carlie Lowe, Ann Agee, Michele Villagran, Karla Alvarez, Vidya Kilambi, Sylvia Ruiz, Hyokyung (Carrie) Hwang

Responding to the Lack of Diversity in the Librarian Profession

Part of the BIPOC Become Librarians team presenting their findings in a November 2023 seminar.

Ask Dr. Mantra Roy how to characterize the current state of ethnic and racial diversity within the library and archive profession and the response is direct and to the point — "A crisis." A strong characterization coming from this committed library professional now engaged in an effort with colleagues to change this state of affairs.

Dr. Roy is the Collection Strategy Librarian at SJSU's Dr. Martin Luther King, Jr. Library as well as the principal investigator on a two-year pilot mentorship and internship program to introduce undergraduate students who are Black, Indigenous and People of Color (BIPOC) to careers in Library and Information Science (LIS).

In 2022, only 4.3 percent of librarians identified themselves as Black or African American, 8.0 percent as Hispanic or Latino (of any race), and 5.1 percent Asian-American or Pacific Islander.*

On this project, Dr. Roy collaborated with six Co-PIs: 1) Ann Agee, chair, University Library; 2) Jane Dodge, academic liaison librarian; 3) Carli V. Lowe, university archivist; 4) Dr. Michele Villagran, assistant professor in the School of Information; 5) Vidya Kilambi, division manager, Education and Learning Pathways; and 6) Karla Alvarez, community programs administrator from the San José Public Library, as well as Sylvia Ruiz, project coordinator and Hyokyung (Carrie) Hwang '23 MLIS, graduate student assistant in the School of Information.

"The two-year program is called BIPOC Become Librarians (BBL). It was made possible by financial support from the Institute of Museum and Library Services," Dr. Roy says. "The goal of BBL is to introduce librarianship as a possible career choice to BIPOC undergraduate students. The program will inform the long-term goal to recruit, train, develop, and retain a diverse workforce of library and archives professionals."

Dr. Roy and the BIPOC Become Librarians (BBL) team are responding to the lack of diversity by focusing on the two areas likely to have the most impact: mentorships and internships. At the end of two years, the team will have created a mentorship and internship curriculum that can be shared with other institutions that want to introduce LIS careers to BIPOC communities.

** Source: Department for Professional Employees, AFL-CIO. 2023 Fact Sheet on Library Professionals: Facts and Figures.*

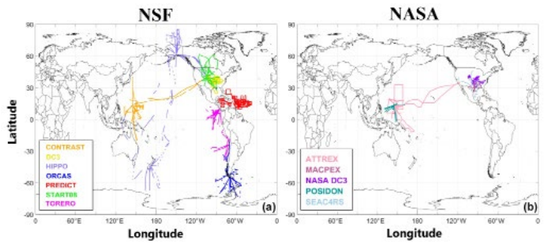
Dr. Minghui Diao's research team: (clockwise from the top left) Jay Singh, '23 MS Physics, William Carter, '24 Meteorology, Elder Contreras, '25 MS Meteorology, Dr. Neel Desai, Department of Meteorology Lecturer and Postdoctoral Researcher, Ching An Yang, '19 Meteorology, '22 MS Meteorology, and Dr. Minghui Diao, Associate Professor in the Department of Meteorology and Climate Science at the College of Science. Dr. Diao's research focuses on how small particles influence cirrus cloud formations, which are the only type clouds that warm the Earth's surface. As humans emit more aerosols into the atmosphere, understanding how cirrus clouds respond to aerosols could significantly impact climate forecasts in the future. Not pictured: Flor Vanessa Maciel, '22 MS Meteorology, Derek Ngo, '23 MS Meteorology, and Dao Wang, '23 MS Meteorology.

Minghui Diao

Studying Cirrus Cloud Particle Formation to Improve Climate Change Predictions

When people look up at higher-altitude cirrus clouds, they notice the wispy strands, so different in shape from lower-altitude clouds like cumulus clouds. When SJSU researcher Dr. Minghui Diao looks up at cirrus clouds, the focus is on how small particles in the atmosphere called aerosols can change cirrus clouds and further change Earth's climate.

Dr. Diao is an associate professor in the Department of Meteorology and Climate Science at the College of Science. The Diao Lab is examining the special characteristics of cirrus clouds and their interactions with aerosols. "In our NASA-funded project, we study how aerosols in the atmosphere influence cirrus cloud formation. Cirrus are the only type of clouds that warm Earth's surface," Diao says. "As we emit more aerosols into the atmosphere, how cirrus clouds respond would make a difference in future climate predictions."



The flight tracks for seven NSF flight campaigns and five NASA campaigns used to quantify the human influences on cirrus clouds in climate prediction. Image courtesy of Flor Vanessa Maciel, Dr. Minghui Diao, and Ryan Patnaude.

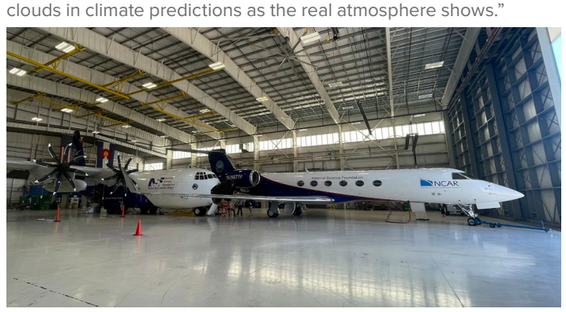
Aerosol Indirect Effects on Cirrus Clouds Based on NASA Flight Campaigns and Global Climate Models

National Aeronautics and Space Administration

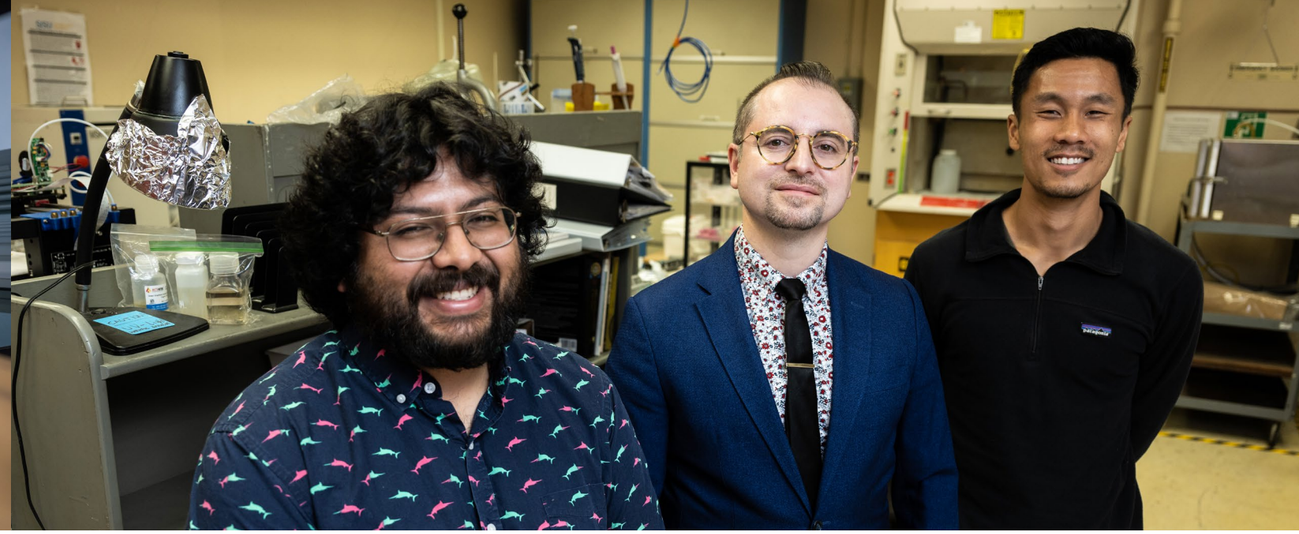
Award(s): $463,671
as of January 19, 2024

Professor Diao has analyzed research aircraft observations, NASA satellite data, and global climate model simulations finding that larger aerosols have stronger indirect effects on cirrus clouds than smaller aerosols, and the clouds are more sensitive to aerosols when the air is cleaner.

"Such aerosol indirect effects are more significant when the air is cleaner," Diao says. "Two climate models are found to underestimate these aerosol indirect effects. That means we may not have sufficiently quantified the human influences on cirrus clouds in climate predictions as the real atmosphere shows."



Photos of two research aircraft at an open house event at the National Center for Atmospheric Research. Data collected by such research aircraft help Dr. Diao and her team to quantify the effect of aerosols (small particles) in the atmosphere on cirrus cloud formation, which are the only type of clouds that warm the Earth's surface. As humans emit more aerosols into the atmosphere, understanding how cirrus clouds respond to aerosols could significantly impact climate forecasts in the future. Photo courtesy of Dr. Minghui Diao.



Dr. Ozgur Keles is flanked by student research assistants Andres Duarte, '24 MS Materials Engineering, and Timothy Tan, '24 MS Materials Engineering, in the Keles Lab. Dr. Keles is the Kordestani Chair and Associate Professor in the Department of Chemical and Materials Engineering at the Charles W. Davidson College of Engineering. He and his team are developing artificially intelligent discovery machines to explore new, synthesizable, sustainable, and high-performing materials.

Ozgur Keles

Discovery of Smart Composite Materials at the Nano Level with Quantum Dots

When you and your research colleagues are determined to create strong and smart carbon fiber materials needed for the batteries and vehicles of the future, you have to go really small. In fact, you have to dive down to nanoparticles, which are about one hundred thousand times smaller than the width of a human hair.

Welcome to the microscopic research world of Dr. Ozgur Keles, associate professor of Chemical and Materials Engineering within the Charles W. Davidson College of Engineering. "We research ways to enhance the mechanical, thermal, and electrical properties of any materials with the highly versatile quantum dot nanoparticles," Professor Keles explains.

"Our objective is to develop the advanced carbon fiber reinforced materials that enable better batteries, composites, and other applications while supporting sustainable development globally." To do this, the Keles Lab team are developing artificially intelligent discovery machines to explore new, synthesizable, and processable materials. "We investigate processing-structure-property-design (PSP-D) interrelationships in tough, strong, lightweight, multi-functional, and sustainable materials."

Professor Keles also points to how this ground-breaking research has created new career opportunities for engineering students. They are able to enhance their resumes and gain an important reference when applying for jobs with tech firms — all while exploring this futuristic nano world of carbon composite materials.

CAREER· Multi-scale Toughening Mechanism in Quantum Dot Nanocomposites

National Science Foundation

Award(s): $599,293
as of January 19, 2024

A close-up of quantum dots in a suspension. Dr. Keles and his team use artificially intelligent cyber-physical systems to discover and manufacture tough, strong, lightweight, multi-functional, and sustainable composites. These materials have a wide range of cutting-edge technical applications, including enhanced structural batteries, vertical takeoff and landing vehicles for air taxis, and other innovations contributing to global sustainable socio-economic development.

Dr. Thomas Connolly (center), Assistant Professor of Physical Oceanography at the College of Science, with research assistants Logan Grady, '24 MS Marine Science (left), and Basil Darby, '24 MS Marine Science (right) in Dr. Connolly's Physical Oceanography Lab at Moss Landing Marine Laboratories standing with an Acoustic Doppler Current Profiler, which uses sound pulses to determine the direction and speed of ocean currents at different depths.

Thomas Connolly

Understanding the Dynamics and Ecological Impacts of Ocean Circulation in Coastal Zones

Dr. Thomas Connolly is an experienced physical oceanographer who studies the complex physics of ocean currents. As an associate professor at the Moss Landing Marine Laboratories in the College of Science, Dr. Connolly's work includes researching the dynamics and ecological impacts of circulation in coastal zones.

"Currents and water properties near the Pacific coast are influenced by a wide range of processes, including wind, tides, waves, and ocean turbulence," Dr. Connolly explains. "Unraveling these complex and physical processes is important for scientists to understand how marine ecosystems respond to changes in weather and climate."

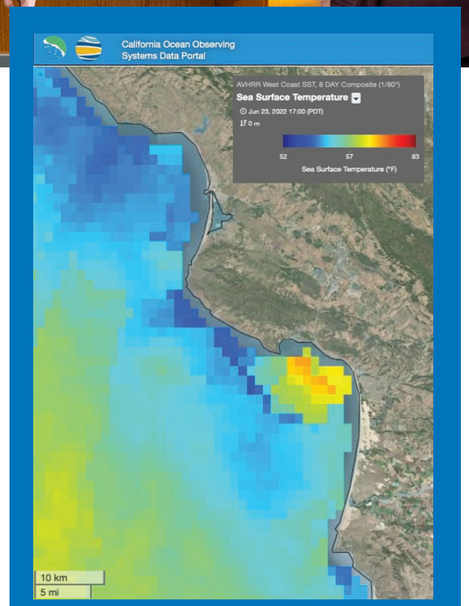
With financial support from the National Science Foundation, Dr. Connolly and a team of graduate student researchers are exploring how currents and water properties are influenced by a range of processes. These include wind-driven upwelling, tides, turbulent mixing, surface waves, and internal waves.

The Moss Landing Marine Laboratories Physical Oceanography Lab uses a variety of techniques to study coastal circulation patterns. Dr. Connolly's team gathers observational data from ships, moorings, buoys, and drifters. Collaborative analyses of observational data and computer model results allow them to gain a deeper understanding of the dynamics of the marine environment and the ecological impacts of circulation in our vital Pacific coastal zones.

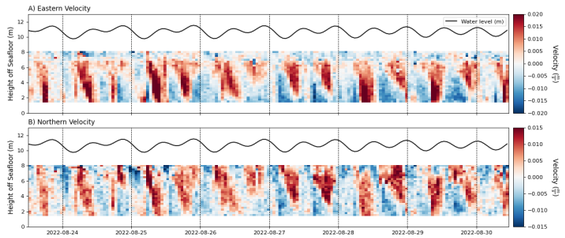
Collaborative Research· Submesoscale Frontal Dynamics and Exchange at an Upwelling Bay

National Science Foundation

Award(s): $405,733
as of January 19, 2024

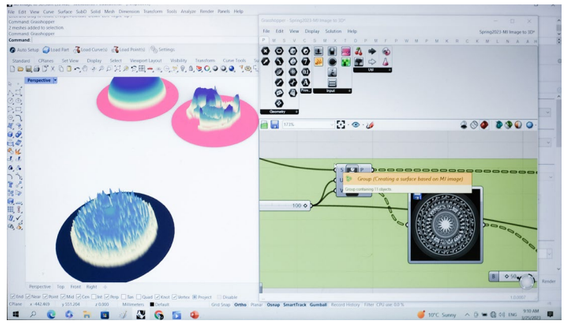


A satellite image of sea surface temperature from June 2022. Current research in Dr. Connolly's Physical Oceanography Lab is focused on water movement between the warm area within San Luis Obispo Bay (yellow and orange colors) and the colder area farther offshore (deep blue color). Unraveling these complex and interrelated physical processes is important for understanding how marine ecosystems respond to changes in weather and climate.



Time series data provided by graduate student Logan Grady, '24 MS Marine Science, showing the strength and direction of water at different depths and oscillation with the tides in Stillwater Cove near Carmel Bay, CA. The tidal motions pictured are key to understanding sources of turbulence and mixing in a kelp forest and marine ecosystems' responses to weather and climate changes.

Dr. Yoon Chung Han, Associate Professor in the Department of Design at the College of Humanities and the Arts and Dr. Ozgur Keles, Assistant Professor in the Department of Chemical and Materials Engineering, Director, Advanced Materials Discovery Laboratory, Co-director, Advanced Manufacturing Laboratory at the Charles W. Davidson College of Engineering collaborated to produce the San José. STL exhibit at the Institute of Contemporary Art San José, which was the culmination of two creative learning workshops intended to introduce community members to the technology and creative potential of 3D printing. Behind the two professors are BFA Graphic Design students Hong Le, '24, Oliver Chen, '24, Klaudia Olmstead, '24, and Katarina Nguyen-Mai, '24.



At the March 2023 3D printing workshop at Chopsticks Alley Art, a participant's computer screen displays the original 2D image alongside its 3D counterpart in Grasshopper software, a significant step of the design process. The finalized 3D design is then saved and converted into a 3D-printed sculpture.

Exploring and Supporting San José's Cultural Heritage and Sustainable Art through 3D Printing Technology

National Endowment for the Arts

Award(s): $20,000
as of January 19, 2024

Yoon Chung Han and Ozgur Keles

San José.STL

STL, or stereolithography, serves as a fundamental file format in the realm of 3D printing, acting as the bridge between digital creativity and tangible objects.

At some universities, collaborations between engineering and design professors may be unusual, but not at San José State. A good case in point is the working partnership between Dr. Yoon Chung Han from the College of Humanities and Arts and Dr. Ozgur Keles from the Charles W. Davidson College of Engineering.

With financial support from the National Endowment for the Arts and the SJSU College of Humanities (via the Arts' Artistic Excellence Programming Grant), they designed a project using 3D printing technology. "The program allowed participants to create 3D-printed objects," Professor Han says.

Their collaborative project was designed to introduce a broad range of community members to the technology and the creative potential of industrial-level 3D printing. At two public workshops hosted by Chopsticks Alley Art and San José Museum of Art, participants learned how to turn 2D digital images into 3D printable models using specialized software programs like Rhino 3D.

The project culminated in an exhibition of the participants' artwork at the Institute of Contemporary Art San José. "I hope that many community members visit the exhibition and observe the beautifully created 3D printed sculptures that reflect the broad diversity of our workshop participants," says Professor Han.

Prototype sculptures. The red wave pattern was generated by a test geometric shape provided by a guest artist, Behnaz Farahi; the white sculpture is a lotus flower. The 2D hearts were souvenirs for workshop participants. Photo courtesy of Dr. Yoon Chung Han.

Each sculpture shown is a prototype from the two 3D printing design workshops at Chopsticks Alley Art and the San José Museum of Art. Both designs were on display in the final art exhibition at the Institute of Contemporary Art San José. Photo courtesy of Dr. Yoon Chung Han.

A recipient of a $2,000 seed grant from SpartUp's Proof of Concept Program. SpartUp is just one of the many support services the Office of Innovation provides to student entrepreneurs and the local community to bring their ideas to

Office of Innovation:

Accelerating Success for Spartaneurs

San José State University has a long history of producing talented graduates who have gone on to launch and grow successful companies throughout Silicon Valley and beyond. This entrepreneurial spirit is alive and well and continues to grow every day with active support from the committed staff at the university's Office of Innovation which was formed in 2020.

At the core of this effort is active, ongoing collaboration with Silicon Valley industry leaders to build and sustain relationships for the benefit of SJSU students, graduates and faculty and the larger San José and Santa Clara County community. This dynamic partnership has extended the local, regional and global impact of SJSU research.

Now these ongoing efforts are fully integrated under the community-wide SpartUp initiative. This is an inclusive, collaborative, interdisciplinary innovation ecosystem joining SJSU Research and Innovation, SJSU academic colleges, community organizations and industry representatives. The goal is to provide an integrated support network for SJSU innovators.

The SpartUp Incubator and the Silicon Valley Small Business Development Center (SVSBDC) provide active support for Spartan Entrepreneurs, or Spartaneurs, in the practice of successful entrepreneurship. This complements and reinforces the instruction and learning provided by the respected faculty at the Lucas College of Business (LCOB), and serves all nine SJSU colleges.

All SJSU students, faculty, staff and alumni are able to join the SpartUp Incubator at no cost regardless of where they are along their startup journey. Networking events, workshops, mentoring sessions, prototyping programs and industry speakers provide Spartaneurs with valuable opportunities to enhance their business skills and upgrade their startups.

The Office of Innovation also hosts the SVSBDC to offer small businesses in Santa Clara County free one-on-one advising sessions on subjects including company formation, human resources, accounting and finance, capital investment and SBIR/SSTR funding. All done to promote an enduring spirit of entrepreneurship throughout the community.

SpartUp Program Manager Max Rothe, '23 Mechanical Engineering, '24 MS Interdisciplinary Studies, and SpartUp participants at an event. SpartUp is an inclusive, collaborative, interdisciplinary innovation ecosystem bridging the SJSU Division of Research and Innovation, academic colleges, community organizations, and industry to provide a network of support for all SJSU innovators.

Learn more about the SpartUp Incubator Program by scanning this QR code with the camera on your phone.

The SJSU Office of Research aims to enhance faculty Research, Scholarship, and Creative Activity (RSCA). This is achieved through events like RSCA in Five, where SJSU faculty members discuss specific research areas. Pictured is a screen capture of the RSCA in Five event focused on Climate Science and Adaptations. Watch previous RSCA in Five talks or sign up for future events on the RSCA in Five website sjsu.edu/RSCAin5.

Office of Research:

Programming and Resources for Faculty and Student Researchers

Navigating the complex world of external grants can be a serious challenge for even experienced faculty, staff, and graduate students. The guidelines, requirements, conditions and deadlines are unrelenting and meticulous. The challenge is even greater for new personnel arriving from another university or part of the world.

Fortunately, faculty, staff, and graduate students at San José State University can respond to these challenges with expert help from the staff at the Office of Research. The office is a vital part of the Division of Research and Innovation. Staff are committed to helping faculty members and students navigate the process to apply for and secure grants that span research, scholarly, and creative activities, service, and instruction. The office assists with proposal development, acting as a thought partner to help craft proposals that are the most competitive.

For first-time, principal investigators, the research office staff offers assistance in completing and submitting external grant proposals through its flagship program, University Grants Academy. New investigators learn about and engage with university offices that support the research enterprise, and obtain individualized and cohort-level assistance on their external grant proposal leading to successful rates of awards.

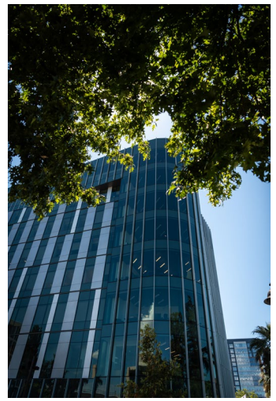
Beyond being a partner on external grants, the Research Compliance unit helps to ensure that research, scholarship and creative activities at SJSU are conducted in ways that are safe, ethical and legal. An important part of this for staff is coordinating the University's Institutional Review Board (IRB), Institutional Animal Care and Use Committee (IACUC), and the Institutional Biosafety Committee (IBC).

Another top priority for Office of Research staff is supporting the essential, team-based, collaborative research that reflects SJSU-specific strengths: semiconductors, artificial intelligence, machine learning, equitable advances to health, climate science and adaptations, community engagement and social justice.

Join an upcoming RSCA in Five event, or watch one that's been recorded, by scanning this QR code with the camera on your phone.

SJSU's new Interdisciplinary Science Building

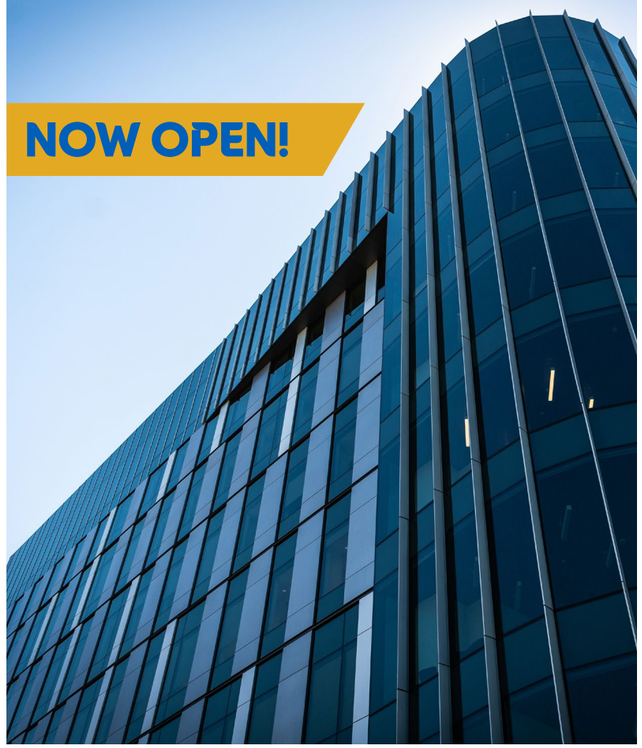
The New, $181M Interdisciplinary Science Building (ISB): Designed for Collaborative Science Teaching, Learning and Research



With its location in Silicon Valley, the global center for high technology and innovation, SJSU has an extraordinary mission to offer students experiential learning opportunities in science that are world-class in every way. To do that, you need buildings with modern science labs that are specifically designed for collaboration to provide interdisciplinary lecture and active learning classrooms for students throughout the campus, including much-needed informal social spaces where all students, regardless of major, can gather and exchange creative ideas, interdisciplinary concepts, and conduct experimentation outside the classroom.

In fact, you need a building like the new $181M Interdisciplinary Science Building (ISB), with partial funding provided by the SJSU Research Foundation. The 164,000-square-foot state-of-the-art teaching and research facility houses the Colleges of Science and Professional and Global Education across eight floors of integrated and collaborative space.

"The ISB represents the culmination of many years of work by an army of participants," College of Science Dean Michael Kauffman says. "It is incredibly exciting to see our vision for the building come to life. We designed it to offer transformative student experiences in state-of-the-art teaching classrooms and labs."



The new Interdisciplinary Science Building.

The first six and a half floors of the ISB are designed for biomedical research and teaching activities. The seventh floor houses the Wildfire Interdisciplinary Research Center. Programs from the College of Professional and Global Education are also located on the seventh and eighth floors.

This is an interdisciplinary space for high-performance computing collaborations by faculty from the College of Science engaged in leading-edge research. The Innovation Loft houses labs for data analytics, intelligent systems, metaverse labs, virtual reality, and science tech research projects.

The campus community during an early tour of the Interdisciplinary Science Building.

"The new ISB will make a huge difference in terms of organization and productivity for science students," Madalyn Radlauer, associate professor of chemistry says. "It will benefit both students and faculty to be working in a beautiful, modern facility. It'll be the kind of space that helps create energy and enthusiasm."

Silicon Valley Small Business Development Center:

Supporting Small Businesses and Entrepreneurs Across the Community

When a university is located in the heart of Silicon Valley, it has a unique responsibility to support entrepreneurship among its students and faculty. Fortunately, SJSU has the experts at the Silicon Valley Small Business Development Center (SVBDC) to provide the knowledge and expertise to do just that.

Edgar Ceron, the director of the SVBDC, and Kim Tung Nhac Tran, the SVBDC's project manager and marketing operations professional, say they are proud to host the SVSBDC at SJSU as part of connecting the Santa Clara community to our campus. "We support small businesses in the county with a range of services like workshops, networking events, and one-on-one advising sessions with subject matter experts," says Ceron.

One recent success story for the SVSBDC team is tech startup NavigateIO. This is a company that provides infrastructure location tracking for first responders navigating the challenges of high-rise buildings. The SVSBDC staff assisted Sukhi Lamba, CEO of NavigateIO, to prepare for and win a key FRST grant challenge by using the facilities at the MLK library. NavigateIO was able to test their location accuracy technology in a real-world scenario and win $50K.

Another recent success story for the SVSBDC team is Nancy Moua, a family nurse practitioner, and her San José business Revive Therapy & Aesthetics – a medical business aiding in wellness through IV therapy, regenerative medicine, and aesthetics. Facing challenges as a first-time entrepreneur, Nancy sought support for grant acquisition and business planning. Working with a dedicated SVSBDC advisor, Nancy received guidance in marketing strategy, financial planning, and attended SVSBDC webinars. With SVSBDC's assistance, she secured a $5K DREAM FUND grant which enabled a timely business launch. "I consider myself very lucky to have found the SVSBDC; the DREAM FUND program and the resources that they offered were incredibly beneficial. I couldn't have imagined starting a new business without their genuine support and guidance," says Nancy.

"We provide unparalleled access to no-cost, technical, and financial expertise from entrepreneurs who have seen it all," Ceron says. "This includes no-cost, high-level advising for potential entrepreneurs in areas like financial modeling and projection pitch preparation to angels and VCs, go-to-market strategies, and access to investment capital."

In just its second year of operation, the SVSBDC exceeded its goals by serving 323 clients and generating $69.5M in total economic impact of which $17.5M was from the federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs and other grant programs. Ceron and his staff hope to exceed these numbers in the current year by expanding corporate relationships and securing additional sponsorships.

Ceron and Tran have a simple message for aspiring tech entrepreneurs within the university community. "If you are starting a business in Santa Clara County, we would like to hear from you. If you've been in business for two to five years and want to reach the next plateau, we are ready to assist."

Nancy Moua and her business Revive Therapy & Aesthetics is one of the most recent success stories for the SVSBDC.

Sign up to become a client of the SVSBDC by scanning this QR code with the camera on your phone.

Converting Research Intellectual Property to Commercialization Opportunities

Commercialization is the step-by-step process of moving inventions from their beginnings in university research and innovation out into the business marketplace where they can have direct social and economic impact. Making commercialization work takes a dedicated team to manage the various moving parts of the process.

Every invention moves along its own commercialization pathway. The invention may have been combined with other technologies to improve an existing product, or. Or it may have been designed as the start of something entirely new. The invention may make its way to either the consumer market, the business-to-business economy or both.

In order to make this intricate process work, you need experts like Sandeep Mukkamala, a specialist with the Office of Innovation. According to Mukkamala, “We engage with university researchers to create commercialization strategies that are effective and facilitate licensing agreements with external organizations to promote new opportunities,” he says.

He and his colleagues in the Office of Innovation offers market research, industry collaboration, and business networking opportunities to showcase research innovations. They share expertise to help navigate legal and regulatory requirements, as well as and provide vital resources for researchers interested in launching their own startups.

“By guiding researchers through the commercialization process, we enhance the university’s reputation as an innovation hub, attract external funding and promote research excellence. Our commercialization efforts generate new revenue for the university and help support additional research initiatives and infrastructure,” Mukkamala adds.

Mukkamala and his Office of Innovation colleagues point to the benefits of commercialization for the San José community and the entire region. Benefits like expanded job creation, greater economic development, and access to innovative products. All of which help improve the quality of life for the area’s residents.

When university researchers make scientific discoveries, create unique works of art, develop unique algorithms, or create breakthrough devices, the result is intellectual property (IP). This is a special category of property that flows from the creative effort of the researcher out into the legal and commercial world of products and services.

Assisting researchers with this process is the responsibility of Sandeep Mukkamala, the Office of Innovation’s Intellectual Property Specialist. “Our team offers comprehensive assistance navigating intellectual property (IP) protection, patenting innovations, securing copyright for creative works and trademarks for university-related products and services.”

“We also provide educational resources, workshops, and training sessions to empower faculty with the knowledge and tools necessary to understand, protect, and capitalize on their intellectual property,” Mukkamala adds. “The workshops and training sessions cover key aspects of intellectual property rights and technology transfer processes.”

The process of obtaining a patent can often take four to five years. It starts with an attorney or patent agent filing a patent application with the U.S. Patent and Trademark Office (USPTO). The researcher is then asked to sign an inventor’s declaration and assignment. This step in the process assigns the patent rights to the university.

After about a year, the applicant’s patent attorney will receive written notice from the USPTO stating that the application and its claims have been accepted, or that they have been rejected. Very often there are additional requests for information and clarification. This lengthy back and forth is what adds years to the approval process.

IP experts like Mukkamala assist with this complex process, which leads to additional benefits from the partnership. The university benefits from increased revenue, enhanced reputation, and research excellence, and the larger community benefits from economic development, job creation, access to innovation, and a better quality of life.

Learn more about the wide range of intellectual property (IP) support available to faculty, staff, and students by scanning this QR code with the camera on your phone.

Dr. Hilary Hurst is a 2023 Early Career Investigator Award recipient and an Assistant Professor in the Department of Physics and Astronomy at the College of Science.

Hilary Hurst
2023 Early Career Investigator Award

Unlocking the Inner Secrets of Theoretical Quantum Information Science

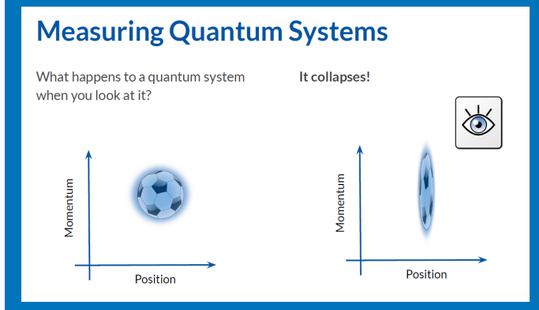
Early Career Investigator Awards are given only to researchers who have done distinguished work in ways that are remarkable given career trajectories that are still unfolding. Dr. Hilary Hurst is one such researcher. She is an assistant professor in SJSU's Department of Physics and Astronomy at the College of Science.

Her research lies in the challenging field of theoretical quantum information science. Actually, 'challenging' may be too mild a word for the work Professor Hurst does. Consequently, she has come up with a visual way to describe her field to those unfamiliar with her world of quantum science.

"Imagine you had a soccer ball, but every time you looked at it, the arrangement of black and white polygons on the surface changed its orientation or color," she says. "That would be pretty strange, right? Yet, that is what happens to a quantum system when we measure it. Our observation causes it to 'collapse.'"

By 'collapse' she means fundamentally change its character. This change is usually an obstacle to practical, scalable quantum technologies. As a result, her research in theoretical quantum information science focuses on finding new ways of measuring these systems — through a technique called weak measurement — to avoid 'collapse' and make them more robust and useful.

Professor Hurst enjoys not just her research, but also interaction with her students. "SJSU students, graduate and undergraduate, from several departments and fields of study, have been involved in my research since I started here in the fall of 2020. They have enhanced my experience by bringing new ideas and fresh perspectives to our discussions."



An excerpt from Dr. Hurst's presentation at a recent RSCA in Five speaking event showing that when a quantum system is measured, it "collapses" or changes - abruptly and irreversibly. Dr. Hurst's research focuses on finding new ways to avoid "collapse" when measuring quantum systems.

Research funding brought to SJSU

$946,606
as of January 19, 2024

Dr. Melissa Beresford is a 2023 Early Career Investigator Award recipient and an Assistant Professor in the Department of Anthropology at the College of Social Sciences.

Melissa Beresford
2023 Early Career Investigator Award

Researching Norms That Make Social Infrastructures Resilient and Successful

The SJSU Early Career Investigator Award recognizes distinguished SJSU faculty who have excelled in research, scholarship, and creative activity during their initial time at the university. This year, Dr. Melissa Beresford from the Department of Anthropology is among this elite group of distinguished award winners.

Her research examines how people use informal, hidden economic arrangements to cope with the challenge of water insecurity. Arrangements like sharing jugs of water with neighbors, pooling labor and resources to build community water systems, or buying water under the table from informal water vendors.

"My goal is to understand when and how these hidden economic arrangements — what we call social infrastructures — can protect people from the most severe effects of water insecurity," she says. "Versus when they might actually exacerbate the problems of having inadequate water. Like taking up more time, being more expensive, or triggering stress and anxiety."

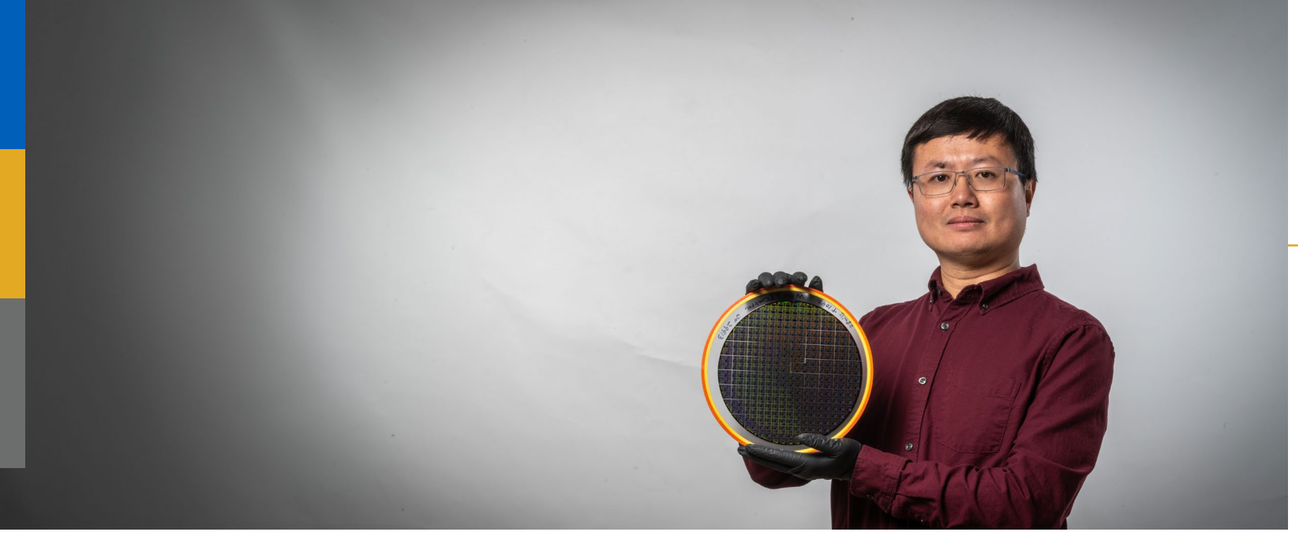
Dr. Beresford and her team are currently studying households in unincorporated areas of Santa Clara County where there is no public water access. Many of the households have lived there for generations and have developed deep cultural knowledge and strong norms on how to cope with unpredictable water availability. She is also leading a global team of researchers conducting similar research in water insecure communities around the world to examine norms around social infrastructures for water cross-culturally.

"If we know what makes social infrastructures more successful and resilient, we can make better recommendations for how to support and cultivate them, and even how to better integrate them with new policies and technologies, which can help provide people with the water they need."

Department of Anthropology Assistant Professor Melissa Beresford and the Culture, Economy, and Environment (CEE) laboratory group reviewing the data analysis for one of the lab's projects.

Research funding brought to SJSU

$571,323
as of January 19, 2024



Dr. Hiu-Yung Wong is the 2023 Industry-Sponsored Researcher Award recipient and an Associate Professor in the Electrical Engineering Department at the Charles W. Davidson College of Engineering.

Hiu-Yung Wong
2023 Industry-Sponsored Research Award
Developing Cryogenic Semiconductor Transistors for Quantum Computer Interfaces

Industry-Sponsored Research Award winner, Dr. Hiu-Yung Wong, works in a research field that involves studying the super low-temperature (cryogenic) properties of semiconductor transistors down to 4.2 Kelvin, which is just 4.2 degrees above absolute zero.

Cold? Yes, you could say that. In fact, Professor Wong could easily make the claim that he and his research associates and graduate students are conducting one of the "coolest" experiments on the entire SJSU campus. This definitely is the "coolest" semiconductor experiment on campus.

His research with the world leading semiconductor company, Samsung, and quantum-engineered materials and intellectual property company Atomera is vital because cryogenic semiconductors are critical components in quantum computers, space exploration, and scientific instruments. In other words, Professor Wong and his team are in the vanguard of advancing cutting-edge semiconductor technologies.

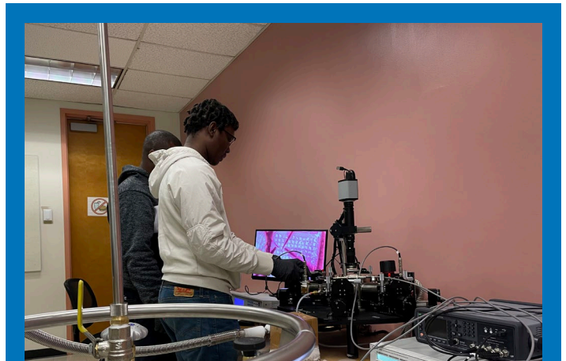
"We have measured quantum-engineered transistors, 65nm transistors, and 14nm FinFET (3D transistors) and developed the corresponding empirical models," he says. "And, we will further develop TCAD models, which can be used in commercial simulators to assist the design of cryogenic semiconductors."

His interest in cryogenic semiconductors was sparked by the advent of quantum computers. Most of these specialized computers operate at ultra-low temperatures. To develop a large-scale quantum computer, you need cryogenic semiconductor chips to control its operations.

A rewarding part of Professor Hiu-Yung Wong's work is the interaction with his students. "I am fortunate to have undergraduate and graduate students working on this research project," he says. "They are hardworking and resilient and fast learners." And, undoubtedly proud to be working on such a 'cool project.'

Research funding brought to SJSU

$2,090,257
as of January 19, 2024



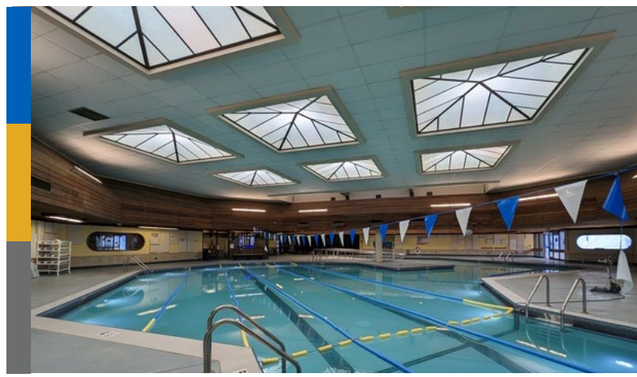
The student researchers in Dr. Wong's laboratory learn invaluable job skills in a leading-edge industry, bolstering their future employment opportunities.

SELF-SUPPORT PROGRAMS

The SJSU Research Foundation supports campus by administering the following self-support programs including their financial management, contracting and human resources.

Timpany Center
Physical Health and Wellness

The Timpany Center promotes health and wellness to individuals with disabilities, obesity and advanced age. In partnership with Santa Clara County and the SJSU Research Foundation, the non-profit boasts a newly-renovated swimming pool, adapted fitness center, open swim and gym usage, swim lessons, personal training, group exercise classes, physical therapy and more.



International House
An Intercultural Home

The International House is an intercultural home to approximately 70 U.S. and international students attending San José State University. It was founded in 1978 by alumni of SJSU, Alan and Phyllis Simpkins, and is a very special jewel on the SJSU campus.

International Gateways
English Language

In 2023, International Gateways provided access to SJSU for students from 40+ countries through intensive English, Path to SJSU degree, and semester study programs. Summer in Silicon Valley program participants worked on an innovative team project with SJSU student mentors, learned from SJSU professors, and visited Silicon Valley companies.

2024 SJSU STUDENT RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITY (RSCA) COMPETITION FINALISTS

These students and their research work will represent SJSU at the 38th Annual CSU Student Research Competition at the California Polytechnic State University in San Luis Obispo.

Anoushka Lakshmi, '25, BS Biomedical Engineering, Charles W. Davidson College of Engineering

Faculty Mentor: Miri VanHoven, College of Science

Exploiting the Metastable Brominated Diamond Surface for Amine Functionalization with Linear, Cyclic, and Branched Amines

Aries Chu, '25, MS Human Factors and Ergonomics, Charles W. Davidson College of Engineering

Faculty Mentor: Gaojian Huang, Charles W. Davidson College of Engineering

Human-Machine Interaction in Autonomous Vehicles: Comparing Tactile, Visual, and Combined Feedback for Takeover Scenarios - A Universal Design Approach for Individuals with Hearing Disabilities and Non-Hearing-Impaired Users

Barbara Boone, '24, Child and Adolescent Development and Psychology, Connie L. Lurie College of Education

Faculty Mentor: Dina Izenstark, Connie L. Lurie College of Education

Exploring the Social and Emotional Effects on College Students Volunteering at a Campus Community Garden

Caitlin Pambid, '23, BA Anthropology, College of Social Sciences

Faculty Mentor: Erik Johnson, College of Humanities and the Arts

Death to the Museum (As We Know It)

Inaya Rehman,'24, Psychology, College of Social Sciences

Faculty Mentor: Michael Aguilar, Dr. Martin Luther King, Jr. Library

The Impact of Social Isolation During COVID-19 on Self-efficacy and Academic Success Among San José State Students

Martin Alvarez Lopez, '25, MS Software Engineering, Artificial Intelligence, Charles W. Davidson College of Engineering

Manan Choksi, '25, MS Artificial Intelligence, College of Professional and Global Education

Sai Yaaminie Ganda, '25, MS Artificial Intelligence, College of Professional and Global Education

Vaibhavi Hiteshkumar Savani, '25, MS Artificial Intelligence, College of Professional and Global Education

Faculty Mentor: Bernardo Flores, Charles W. Davidson College of Engineering

San José Urban Forest

Poorva Jain, '25, MS Human Factors and Ergonomics, Charles W. Davidson College of Engineering

Faculty Mentor: Gaojian Huang, Charles W. Davidson College of Engineering

Perception of Smart Home Technology by Senior Citizens: A Study of Healthy and Unhealthy Adults

Priyanka Bhyregowda, '24, MS Data Analytics, College of Professional and Global Education

Faculty Mentor: Mohammad Masum, College of Professional and Global Education

A Novel Framework Integrating PCA and Active Machine Learning for Efficient Dimension Reduction

Shruthi Srinivasan, '24, MS, Biomedical Engineering, Charles W. Davidson College of Engineering

Khoa Letran, '24, MS, Biomedical Engineering, Charles W. Davidson College of Engineering

Salim Nasir, '24, BS, Biomedical Engineering, Charles W. Davidson College of Engineering

Faculty Mentor: Yun Wang, Charles W. Davidson College of Engineering Microfluidic Nano-biosensor for Detection of Botulinum Neurotoxin Serotype A

Zhi Zhang, '24, MS Human Factors and Ergonomics, Charles W. Davidson College of Engineering

Faculty Mentor: Gaojian Huang, Charles W. Davidson College of Engineering

Exploring Drivers' Preference on Vibrotactile Signals for Takeover Warning on Automated Vehicles: A National Survey

STATEMENT OF ACTIVITIES

FISCAL YEAR ENDING June 30, 2023

REVENUE AND SUPPORT

Federal Contracts and Grants
$19,662,572

State contracts and Grants
$12,417,338

Other Contracts and Grants
$9,532,099

Indirect Cost Recovery- C&G Other Revenue and Support
$9,469,881

Other Revenue and Support
$9,654,945

In-Kind Donations
$1,509,001

Total Revenue
$62,245,836

EXPENSES

Sponsored Programs
$42,746,939

Board Designated Programs
$417,714

Campus Organizations Activities
$6,264,542

Support Activities - Management and General
$9,872,384

Transfers to SJSU and Tower Foundation
$500,000

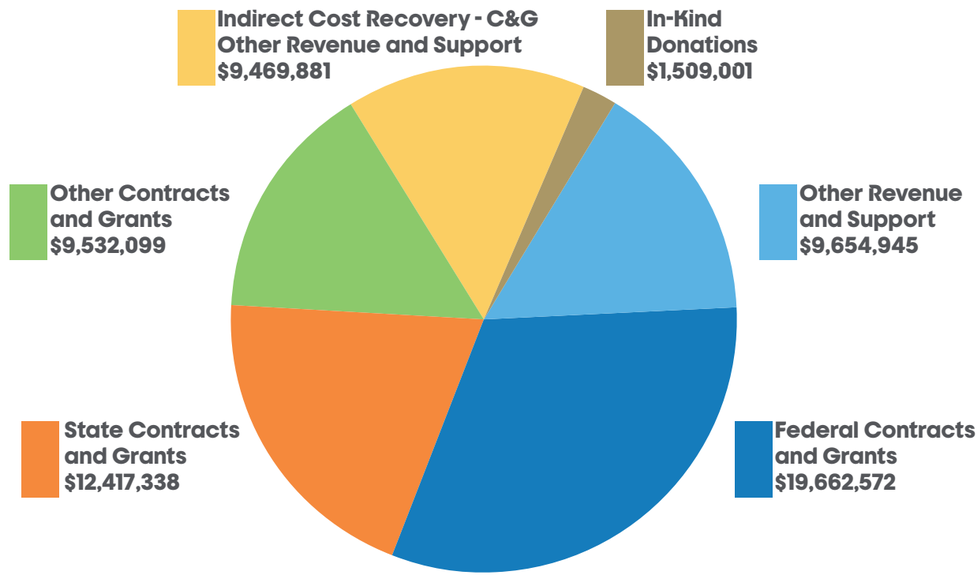
Total Expenses
$59,801,578

CHANGE IN NET POSITION
$2,444,258

Net Position at beginning of Year
$17,138,646

Net Position at end of Year
$19,582,904

Types of Revenue and Support



FISCAL YEAR 2022-2023

CONTRACTS, GRANTS, AND FELLOWSHIPS

Charles W. Davidson College of Engineering

Aerospace Engineering

Nikos Mourtos
Scan Drawings from Unitary Plan Wind Tunnels
Jacobs Research
$27,100

Scan Drawings from Unitary Plan Wind Tunnel
Jacobs Research
$17,373

ATOM Business Office Admin. Assistant
Jacobs, Inc.
$17,533

Biomedical Engineering

Alessandro Bellofiore
A Comprehensive Testing Platform for Mechanical Heart Valves to Propel Innovation Towards Anticoagulant-Independence
National Institutes of Health
$256,375

Patrick Jurney
Reactive Ion Plasma Treatment of Cardiovascular Biomaterials to Understand the Effect of Nanotopography on Endothelialization
National Institutes of Health
$138,828

Chemical and Materials Engineering

Katy Kao
Adaptive Evolution of Candida Biofilms
National Institutes of Health
$138,040

Collaborative Research: Deciphering Complex Phenotypes in Bacteria Aided by Continuous Genome Shuffling and High Throughput Analytical Technologies
National Science Foundation
$6,500

Dahyun Oh
Center for High Precision Patterning Science (CHiPPS)
Lawrence Berkeley National Laboratory
$132,000

Michael Oye
CommUniverCity: COVID Recovery Outreach Effort
City of San José
$150,000

Community Planning: Guadalupe River Park Conservancy
Guadalupe River Park Conservancy
$15,000

CommUniverCity: Community Leadership Program (CLP) 22-23
City of San José
$80,000

Community Services Program '22-'23
City of San José
$100,000

CommUniverCity: COVID Recovery Outreach Effort
City of San José
$150,000

Liat Rosenfeld
Packed and Fluidized Beds VR Experiment
California State University, Fresno
$4,000

Civil and Environmental Engineering

Akthem Al-Manaseer
CSULB and SJSU Joint Training and Certification Program for Caltrans and Industry
California State University, Long Beach Research Foundation
$223,157

Indumathi Jeyachandran
Gas Leak Geospatial Visualization and Analysis
ABB Ltd.
$61,759

Computer Engineering

Gheorghi Guzun
CAREER: Scalable and Adaptable Sparsity-Driven Methods for More Efficient AI Systems
National Science Foundation
$106,812

Kaikai Liu, Wencen Wu
RINGS: Enabling Joint Sensing, Communication, and Multi-Tenant Edge AI for Cooperative Perception Systems
National Science Foundation
$665,053

Ronald Mak
Confidential
$101,699

Younghee Park, Curtis Asplund
USC-SJSU ICCAE Consortium's National Security and Intelligence Scholars Research Program
University of Southern California
$25,000

Younghee Park, Fabio Troia
REU Site: Undergraduate Research Experience for Underrepresented Groups to Learn Emerging Topics in Cybersecurity
National Science Foundation
$373,981

Stanislav Tiomkin
NSF CRII RI: Interpretable Framework and Transformative Applications for Viability in Autonomous Agents
National Science Foundation
$174,874

Discovery and Utilization of Symmetries in Dynamical Systems
University of Hertfordshire
$32,941

Dean's Office

Kacey Beddoes
Research: Characterizing Gendered Socialization of Early Career Civil Engineers to Promote Inclusive Practices and Retention of a Diverse Workforce
National Science Foundation
$346,910

Nicole Okamoto, Mathew Stowe
MESA Engineering Program (MEP) - Academic Year 2020-2021
Regents of The University of California
$80,000

Electrical Engineering

Chang Choo
Study of Resource Allocation Schemes for AI-Based Self-Configuration in Ultra-Dense Small Cell Systems
Electronics and Telecommunications Research Institute
$40,000

Shrikant Jadhav
An HPC Platform for Real-Time Environment Monitoring Using Machine Learning
Savannah River National Laboratory
$251,246

Jonathan Ponniah
Deep Reinforcement Learning for Smallsat/UAV Swarm Motion Control
Lockheed Missiles and Space Company
$20,000

Hiu Yung Wong
Cryogenic Characterization of MST Devices
Atomera
$50,052

Hiu Yung Wong
Cryogenic MOSFET Mobility Extraction and Modeling
Samsung Semiconductor
$75,000

Industrial and Systems Engineering

Gaojian Huang
Confidential
$55,805

Anil Kumar
Confidential
$35,003

Hongrui Liu
Proposal to Test/Research Market Clearing Systems For ISO New England
ISO New England Inc.
$25,000

Mechanical Engineering

Farzan Kazemifar, Crystal Han, Nicole Okamoto, Anil Kumar
Establishing an Industrial Assessment Center at San José State University
United States Department of Energy
$1,399,940

Mojtaba Sharifi
ERI: Autonomous Personalized Control of Lower Limb Exoskeletons using Impedance Regulation and Trajectory Shaping
National Science Foundation
$199,946

Ali Tohidi
Heat Transfer Model for the Assemblage of Firebrands Over Surface Fuels
National Science Foundation
$343,370

College of Health and Human Sciences

Audiology

Anusha Yellamsetty
Clinical Investigation and Validation of a Self-Fitted Air-Conduction Hearing Aid
Concha Labs
$16,158

Rapid, Multileveled Assessment of Hearing Dysfunction in Operational and Post-deployment Environments
Regents of The University of California
$4,578

Dean's Office

Laurie Drabble
A Unified Protocol to Address Sexual Minority Women's Minority Stress, Mental Health and Hazardous Drinking
Yale University
$19,206

Kinesiology

Areum Jensen
The Role of Sympathetic Nervous System Activity on Blood Pressure Regulation in Individuals with Autism Spectrum Disorder
National Institutes of Health
$138,811

Jihyun Lee, Matthew Love
CSU Inclusive Post-Secondary Education Pilot Programs
California State University, Long Beach Research Foundation
$101,083

Jennifer Schachner
Title III D Health Promotion Evidence-Based Sourcewise
$69,078

American Rescue Plan Act Funding Sourcewise
$38,370

Public Health and Recreation

Miranda Worthen, Soma Bourbon
CIVIC-PG Track B: Strengthening Community Paramedicine Services through Action Research: Pathfinding for Patients in Complex Crises
National Science Foundation
$49,974

School of Social Work

Yolanda Anyon
CA-MTSS Pilot
University of California, Los Angeles
$123,306

Laurie Drabble
Health Effects of Intersectional Stigma Among Sexual Minority Women
University of California, Santa Barbara
$20,596

Peter Allen Lee
BHWET Integrated Behavioral Health MSW Stipend Program
University of California, Berkeley
$70,800

San José State University BASW Mental Health Scholarship Program (MHSP) 2019-2021
Santa Clara County
$300,000

Title IV-E Child Welfare Training 2022-2024
University of California, Berkeley
$1,812,160

Jennifer Wolf
Changes in Alcohol Use and Harsh Parenting during COVID-19
Ohio State University
$26,313

Jennifer Wolf
Enhancing Permanency in Children and Families (EPIC) Program
The Ohio State University
$22,776

College of Humanities and the Arts

Department of Art and Art History

Barbara Hughes
Bay Area California Arts Project (BayCAP)
Regents of The University of California
$65,000

Department of Design

Yoon Chung Han, Ozgur Keles
Exploring and Supporting San José's Cultural Heritage and Sustainable Art through 3D Printing Technology
National Endowment for the Arts
$20,000

Department of English and Comparative Literature

James Coleman, Scott Jarvie
San José Area Writing Project 2022-2023 - Federal
Regents of The University of California
$39,089

Katherine D. Harris
San José Downtown Association Public Art Walking Tour
San José Downtown Association
$10,000

Bronwyn Lamay, Scott Jarvie
San José Area Writing Project 2022-2023 - State
Regents of The University of California
$36,506

Bronwyn Lamay
San José Area Writing Project Learning Acceleration Funds 2022-2023
Regents of The University of California
$25,000

School of Journal and Mass Communication

Tina Korani
International Mother Language Celebration
Filco
$7,000

School of Music and Dance

Christopher Luna-Mega
Downtown San José Sound Walk, Concert, Sound Installation
San José Downtown Association
$5,000

College of Professional and Global Education

Applied Data Science Department

Shayan Shams
Employing Artificial Intelligence to Predict Clinical Outcomes in Ovarian Cancer
Ovarian Cancer Research Alliance
$900,000

School of Information

Anthony Chow
Reading Nation Waterfall
Institute of Museum and Library Services
$633,305

Anthony Chow, Darra Hofman
Seeking Immortality: The Northern Cheyenne Preservation Project (NCPP)
Northern Cheyenne Tribe
$69,594

College of Science

Dean's Office

Shelley Cargill
Gavilan College STEM Grant Subproject
Gavilan Joint Community College District
$150,000

MESA College Prep Program for AY 2022-2023
Regents of The University of California
$280,000

SJSU MESA College Prep Program - The Foundation for Hispanic Education 22-24
Foundation for Hispanic Education
$16,081

Michael Kaufman
Astronomical Infrared Bands as Calibrated Probes of Astrophysical Conditions in the JWST-era with The NASA Ames PAH IR Spectroscopic Database
National Aeronautics and Space Administration
$551.613

Michael Kaufman, Christiaan Boersma
NIRSpec IFU: Deuterated PAHs, PAH-nitriles, and PAH Overtone and Combination Bands (ID 1591)
Space Telescope Science Institute
$109,840

Virginia Lehmkuhl-Dakhwe
Silicon Valley Research Practice Partnership for Computational Thinking and Positive Identity in Computer Science (SV RPP for CT & PICS)
Santa Clara County Office of Education
$71,704

Virginia Lehmkuhl-Dakhwe, Melody Moh, Alexandra Chakarov
CS4NorthCal: Scaling an Evidence-based Model for Teacher Preparation and Support to Provide Equitable and Inclusive CS Ed. in California High Schools
San Francisco State University
$343,160

Department of Biological Sciences

Walter Adams
Microbial and Host Factors that Promote Epithelial Disruption and S. pneumoniae Transit out of the Lung
National Institutes of Health
$146,500

Jessica Castillo-Vardaro
BRC-BIO: Adaptive Variation through Space and Time in American Pikas (Ochotona Princeps)
National Science Foundation
$501,088

Maya Devries, Luke Gardner, Michael Graham, Scott Hamilton
Examining the Capacity of Seaweed and Shellfish Co-Culture to Improve the Physiology, Biomechanics and Outplanting of Farmed Juvenile Abalone and Oysters
United States Department of Commerce
$299,663

Aquanauts: A Transformative Research and Training Experience for Undergraduates in Shellfish Aquaculture
University of California, San Diego
$74,999

Frank Huynh
Regulation of Mammary Gland Development by Sirtuin 4
National Institutes of Health
$146,500

Jennifer Johnston
Identification of Novel Safe Harbors to be Used in a Gene Editing Strategy for the Treatment of Hemophilia A
National Institutes of Health
$146,500

Cleber Ouverney, Alberto Rascon Jr.
U-RISE Program at San José State University
National Institutes of Health
$67,993

Alexander Payumo
Neurohumoral Interactions Coordinating Mammalian Cardiomyocyte Size and Proliferation
National Institutes of Health
$366,250

Sonia Singhal
Effects of The Rate of Environmental Change on Mutational Patterns and Evolutionary Constraints
National Institutes of Health
$366,250

Julio Soto
Intergovernmental Personnel Award 2022-2024
National Science Foundation
$239,796

Miri VanHoven
Olfactory Memory Acquisition Consolidation and Recall
University of California, San Francisco
$108,875

The Effect of Sleep on Neural Circuit Connections
University of California, San Francisco
$175,466

Kate Wilkin
SJSU Prescribed Fire Monitoring and Research Program in the South Bay and Central Coast
California Department of Forestry and Fire Protection
$396,601

Department of Chemistry

Sonia Cuellar-Ortiz
Latin X Conference
California State University, San Bernardino
$2,705

Nicholas Esker
HIPPO: Horizon-broadening Isotope Production Pipeline Opportunities
Texas A&M University
$10,131

Laura Miller-Conrad
Blocking Cationic Antimicrobial Peptide-Resistance in Pseudomonas Aeruginosa
National Institutes of Health
$109,875

Alberto Rascon Jr.
Understanding the Functional Roles of Newly Identified Serine "Orphan" Proteases and Two Chymotrypsins in the Aedes aegypti Midgut
National Institutes of Health
$109,875

Karen Singmaster
CSU SJSU LSAMP Program 2018-2023
California State University, Sacramento
$60,000

Roger Terrill
Enhanced Coating Technology
Sahajanand Technologies Private Limited
$4,000

Annalise Van Wyngarden
Nuclear Chemistry Summer School (NCSS)
City University of New York
$243,867

Ningkun Wang
Elucidating the Mechanism for Allosteric Regulation of SIRT1 through the N-Terminal Region
National Institutes of Health
$142,760

Abraham Wolcott
Supporting Active Learning in Introductory STEM Courses with ExtendedReality
California State University, Fresno
$9,000

Geology Department

Kimberly Blisniuk
CAREER: Re-Evaluating the Evolution of the Southern San Andreas Fault along its Restraining Bend from Holocene to Mid-Quaternary Timescales via 36Cl/10Be Burial and Cosmogenic Exposure Dating
National Science Foundation
$66,753

Development of Faults through Sand and the Slip History of the San Gregorio Fault
University of Southern California
$30,000

Nathaniel Bogie
Deep Connections: Studying Deep Recharge and Healthy Soil Management Practices in California
Regents of The University of California
$10,000

Department of Mathematics and Statistics

Tim Hsu, Marion Campisi, Teng-sheng Moh, Mahima Suresh
Expanding Equity and Access in Discrete Mathematics
San Francisco State University
$174,809

Plamen Koev
Collaborative Research: An O(n2) Algorithm for Orthogonal Eigenvectors of Symmetric Tridiagonals
University of California, Berkeley
$211,750

Julie Spitzer
Santa Clara Valley Mathematics Project FY 22-23 (CSMP State Funds)
Regents of The University of California
$20,000

Santa Clara Valley Mathematics Project FY 22-23 (ESSA federal funds)
Regents of The University of California
$24,223

Liam Stanton
Mathematical Modeling of RAS/RAF Proteins and Associated Oncogenic Pathways
Lawrence Livermore National Laboratory
$227,386

Cristina Tortora
RUI: A Family of Versatile Mixture Models for Analyzing Mixed-Type Data with Asymmetry, Outliers, and Missing Values
National Science Foundation
$150,000

Yan Zhang
Gas Price Analysis of Ethereum Fee Markets
Ethereum Foundation
$25,000

Yan Zhang, Tahir Issa
Multidimensional EIP-1559 and Eigenlayer
Ethereum Foundation
$25,000

Department of Meteorology and Climate Science

Craig Clements

Wildfire Interdisciplinary Research Center

United States Department of Commerce

$1,150,000

METOPS - Analyze 30 YR Climatology 2KM WRF Model (2047625)

Pacific Gas and Electric Company

$559,301

Craig Clements, Amanda Stasiewicz, Adam Kochanski, Kate Wilkin

IUCRC Phase I: San José State University: Wildfire Interdisciplinary Research Center (WIRC)

National Science Foundation

$207,129

Craig Clements, Adam Kochanski, Amanda Stasiewicz, Minghui Diao

FIRE-PLAN: Planning Megafire Research Across Scales and Disciplines

National Science Foundation

$198,171

Minghui Diao

Advancing the Understanding of Cloud Microphysical Processes and Aerosol Indirect Effects in High-Latitude Mixed-Phase Clouds

United States Department of Energy

$186,398

Aerosol Indirect Effects on Cirrus Clouds Based on NASA Flight Campaigns and Global Climate Models

National Aeronautics and Space Administration

$176,902

Developing Partnership between SJSU and DOE Lawrence Livermore National Laboratory to Enhance Climate Research Equity and Inclusion

United States Department of Energy

$149,991

Adam Kochanski

Datasets of Dead Fuel Moisture for California

Lawrence Livermore National Laboratory

$49,642

Improving Understanding of the Impact of Fire-Atmosphere Coupling Processes on Near Fire Circulations and Fire Behavior

California Department of Forestry and Fire Protection

$248,384

Integration and Evaluation of WRF-SFIRE Application for Interoperability in Wildfire Decision Making

Colorado State University

$44,431

Leveraging a Hybrid High-Performance Computing Framework for Wildfire Forecasting

Bay Area Environmental Research Institute

$51,485

Predictive Physics-Based Modeling Framework for Biomass Combustions in Wildfire Conditions

Lawrence Livermore National Laboratory

$31,728

Towards a NU-WRF based Mega Wildfire Digital Twin: Smoke Transport Impact Scenarios on Air Quality, Cardiopulmonary Disease and Regional Deforestation

University of Maryland, Baltimore County

$51,840

Qian Tan

The NOAA Cooperative Science Center in Atmospheric Sciences and Meteorology

Howard University

$54,740

Miguel Valero

Quantitative Measurement of Wildfire Behavior in the Field: Leveraging Remote Sensing for Reproducible Observation and Improved Understanding

National Science Foundation

$49,017

Elizabeth Walsh

Collaborative Research: The Role of the Southern Ocean in Late Miocene Climate Change

National Science Foundation

$192,832

Department of Physics and Astronomy

Alejandro Garcia

Stochastic and Hybrid Models and Algorithms for Fluids

Lawrence Berkeley National Laboratory

$130,111

Hilary Hurst

RUI: Quantum State Control for Ultracold Atoms

National Science Foundation

$180,000

Ehsan Khatami

AI and Data Science Enabled Predictive Modeling of Collective Phenomena in Strongly Correlated Quantum Materials

University of Tennessee

$110,588

Cassandra Paul, Gina Quan, Resa Kelly, Jennifer Avena

Agents of Change: Faculty-Learning Assistant Partnerships Supporting Active, Engaging, Equitable Learning Environments

California State University System

$221,969

Agents of Change: Investigating How Partnerships Between Faculty and Learning Assistants Enable Pathways for Sustainable Institutional and Classroom Transformation

National Science Foundation

$1,070,013

Cassandra Paul, Tammie Visintainer, Marcos Pizarro, Katherine Wilkinson

Transforming Undergraduate Teaching and Learning Through Culturally Sustaining, Active, and Asset-Based Approaches to Introductory Science Courses

National Science Foundation

$433,431

Gina Quan

Transfer Advocacy Groups: Transforming Culture to Support Transfer Students of Color in Undergraduate Physics

National Science Foundation

$850,929

Aaron Romanowsky

A Trail of Dark Matter-Free Galaxies in the NGC1052 Group

Space Telescope Science Institute

$39,502

Characterizing the Unusual Star Cluster Population in a Candidate Dark Matter Free Galaxy

Space Telescope Science Institute

$41,435

Unravelling the Origins of Cluster Ultra-diffuse Galaxies

Jet Propulsion Laboratory

$14,850

Moss Landing Marine Laboratories

Ivano Aiello

A Global Synthesis of Timing and Depth of Biosilica Mineralization in Cenozoic Marine Sediments Based on DSDP-ODP-IODP Legacy Cores

Columbia University

$35,885

Dustin Carroll

Analysis of the Role of Diel Vertical Migrators in the Marine Biological Pump

Brown University

$51,141

Estimating the Circulation and Climate of the Ocean (ECCO)

Jet Propulsion Laboratory

$12,551

Impacts of Changing Sea-Ice on Arctic Ocean Biology

Jet Propulsion Laboratory

$94,471

Ocean Carbon Sink Variability: Internal vs. Forced Mechanisms

Columbia University

$30,871

Using a Data-Constrained Global-Ocean Ecology and Biogeochemistry Model to Study the Role of Biological Pump and Ocean Circulation in Driving Ocean Carbon Cycle Variability

National Aeronautics and Space Administration

$47,434

Ross Clark

Building Capacity for Assessing Wetland Recovery Efforts in Supporting Regional Wetland Health and Resiliency

California State Coastal Conservancy

$29,071

Multi Benefit Land Repurposing Program

California Marine Sanctuary Foundation

$1,445,600

Thomas Connolly

Collaborative Research: Submesoscale Frontal Dynamics and Exchange at an Upwelling Bay

National Science Foundation

$405,733

Synchro: Co-Design Lab for Synchronizing Technology Evolution for Industry, Ocean Science and Conservation

Monterey Bay Aquarium Research Institute

$30,000

Thomas Connolly, Maxime Grand, Holly Bowers

CeNCOOS Partnership: Information Solutions to Power Healthy and Prosperous Oceanic, Coastal and Estuarine Communities

Monterey Bay Aquarium Research Institute

$118,412

Rocio Cooley

The Impact of Domoic Acid on Marine Mammals from Southern California: Cephalopods as Potential Vectors

California Office of Environmental Health Hazard Assessment

$49,972

Rapid Response to Understanding Causes, Impacts, and Treatments of Thiamine Deficiency in California Salmon

University of California, Davis

$19,996

Michael Feinholz, Mark Yarbrough

Marine Optical Buoy (MOBY) Operations and Technology Refresh

University of Miami

$3,226,019

Luke Gardner

White Abalone Restoration Co-Culture Research and Production

United States Department of Commerce

$24,962

Developing Domestic Formulated Feeds and Sea Cucumber Polyculture Integration in California Abalone Aquaculture

Kashia Band of Pomo Indians

$14,988

Michael Graham

Contract between PSA and SJSUF 2022

Phycological Society of America

$13,199

Michael Graham, Scott Hamilton

Universal Hatchery System for Developing New Seaweed Strains for Land-Based Aquaculture Production

University of California, San Diego

$183,009

Michael Graham, Scott Hamilton, Maya Devries

Improving IMTA System Design for the Co-Culture of Seaweeds and Abalone to Mitigate the Effects of Climate Change

University of California, San Diego

$149,999

Scott Hamilton

Assessing the Potential for Rapid Adaptation to Climate Change in Rockfish

California State University, Monterey Bay

$192,167

James Harvey

Estuarine Wetland and Nearshore Ecology Studies along the Pacific Flyway

United States Geological Survey

$110,000

Suisun Marsh Waterfowl Science Investigations: Data Synthesis and Manuscript Preparation

United States Geological Survey

$155,000

Wesley Heim

PG&E Diablo Canyon Power Plant Project

Pacific Gas and Electric Company

$347,636

Wesley Heim, Marco Sigala, Ross Clark

SWRCB-SWAMP Agreement Number 20-006-270

California State Water Resources Control Board

$2,118,044

Deborah Maloney

NSF Graduate Research Fellowship Program

National Science Foundation

$49,000

Birgitte McDonald

Supporting Marine Mammal Stranding Response on the Central California Coast (Sub-award through UCSC)

University of California, Santa Cruz

$20,274

Mara Orescanin

Estuary Inlet Evolution and Dynamics - Year 2 Amendment

University of California, San Diego

$33,768

Jonathan Prince

NSF IPA Assignment

National Science Foundation

$203,212

CONTRACTS, GRANTS, AND FELLOWSHIPS

Marco Sigala
2022 TNA Reporting
Central Coast Water Quality Preservation, Inc.
$87,000

Ahtna Sharpe 2021
Ahtna Environmental Inc.
$8,160

Delta RMP QA Services
MLJ Environmental
$11,910

Morro Bay Foundation Data Navigator Phase 2 - Update and Rebuild
Bay Foundation of Morro Bay
$4,938

Morro Bay Foundation Data Navigator Phase 3
Bay Foundation of Morro Bay
$176,000

Steinberger Slough Sediment and Prey Fish Field Collection (SFEI Project #3022/21)
San Francisco Estuary Institute
$49,609

Edward Thornton
Coastal Land-Air-Sea Interaction- Thornton Portion
Office of Naval Research
$49,689

ROXSI: ROcky shores eXperiments and SImulations- Thornton Portion
University of California, San Diego
$98,536

Michael Wood
Greenland Ocean Observations (GOO)
Jet Propulsion Laboratory
$145,444

Research Opportunities in Space and Earth Science (ROSES)
Jet Propulsion Laboratory
$248,997

Mark Yarbrough, Michael Feinholz
Implementation of MarONet for Support of OCI/PACE Vicarious Calibration
University of Miami
$345,881

College of Social Sciences

Department of History

Victoria Harrison
Payment from the Israeli Consulate into the Jewish Studies Account
Consulate General of Israel to the Pacific Northwest
$2,000

Department of Justice Studies

Margaret Stevenson
Enhancing Employment Through Digital Literacy Workshops Pilot Program
Santa Clara County
$15,906

San José State University Research Foundation (SJSURF) Service Navigation-2022-2023
Santa Clara County
$100,000

Warm Handoff and Reentry Services
California Board of State and Community Corrections
$750,000

Department of Psychology

Valerie Carr
A Harmonized Medial Temporal Lobe Subregion Segmentation Protocol: An Essential Element for Dementia Research
The Ohio State University
$46,256

Hippocampal Subfields Segmentation Summit
National Institutes of Health
$10,000

Cassie Hilditch
2022 Fatigue Management Training for San Francisco Bar Pilots
California Maritime Academy
$6,000

Sean Laraway
Human Systems Integration: Coll. Human Factors Research to Improve Safety, Efficiency and Reliability of NASA's Aeronautics and Space Missions: Phase 2
National Aeronautics and Space Administration
$12,536,329

Task Order No. 03- AS20-01509
ASRC Federal
$121,928

Test Subject Recruitment Office - Task Order No. 2
ASRC Management Services
$43,832

Evan Palmer
Mobile Device Thermal Comfort - Study #2
Google, Inc.
$65,036

Susan Snycerski
Future Vertical Lift: Collaborative Research on Flight Control, Autonomous Rotorcraft, and Human-Systems Interface Design
National Aeronautics and Space Administration
$2,837,314

Implementing Macroergonomics for Increasing the Safe, Effective, and Efficient Operation of the Entry Systems and Technology Division's High Enthalpy Facilities
National Aeronautics and Space Administration
$57,527

SJSURF Support of Elroy Air
Elroy Air
$43,837

SJSURF Support of eVTOL Development
Bell Textron Inc.
$254,236

Department of Urban & Regional Planning

Serena Alexander
Visiting Scholar Position at the U.S. DOT's Climate Change Center
Department of Transportation
$171,432

Serena Alexander, Hilary Nixon
Equitable VMT Mitigation Program for Santa Clara County
Santa Clara Valley Trans Authority
$52,557

Caltrans Urban and Regional Planning Training Program
California Department of Transportation
$141,448

Environmental Studies Department

Craig Clements
Differential Community Needs and Uses of Fire Weather and Smoke Information
United States Department of Commerce
$1,420,000

Dustin Mulvaney
Hydrosocial Dynamics and Environmental Justice in Water-Energy Transitions
Portland State University
$84,065

Bruce Olszewski
Recycling/Reuse Hotline and Website for Santa Clara County
City of Morgan Hill
$166,000

Amanda Stasiewicz
Motivating Homeowners to Take Wildfire Prepared Home Action
Insurance Institute for Business and Home Safety
$45,000

Lynne Trulio
RCN-UBE: San Francisco Bay Research Coordination Network for Student Opportunities in Avian Research (SOAR) to Enhance STEM Education...
Stanford University
$8,100

Sociology and Interdisciplinary Social Sciences Department

Yvonne Kwan
AAPI Activist Perspectives: Collective Community Storytelling in Japantown, San José
San José Downtown Association
$20,000

Joanne Rondilla
Asian American Native Hawaiian/Pacific Islander OHANA Center of Excellence on Empowering Behavioral Health
San José State University
$437,008

Connie L. Lurie College of Education

Child and Adolescent Development

Maria Fusaro, Andrea Golloher, Emily Slusser, David Whitenack
SJSU P-3 Credential ITEP Planning Grant
California Commission on Teacher Credentialing
$250,000

Cara Maffini, Nidhi Mahendra, Matthew Capriotti
Healthy Development Community Clinic: Wellness for Children, Youth, and Families
Substance Abuse and Mental Health Services Administration
$500,000

Cara Maffini, Nidhi Mahendra
Culturally-Responsive Wellness and Communication Interventions: Healthy Development Community Clinic
Santa Clara Family Health Plan
$250,000

Ellen Middaugh, Mark Felton
Institutionalizing CLARION -UC Links/CSU Seed Funding SJSU
University of California, Berkeley
$15,000

Emily Slusser, Maria Fusaro, Andrea Golloher
Santa Clara County Early Learning Master Plan Mid-Implementation Review
Santa Clara County Office of Education
$31,821

Special Education

Matthew Love
CCLA: California Coalition for Learning Acceleration
Santa Clara County Office of Education
$49,963

Dyslexia Grants: San José State University
California Commission on Teacher Credentialing
$14,000

Teacher Education

Katya Aguilar
San José State University Single Subject Intern Program 2022–2023
Milpitas Unified School District
$80,535

Allison Briceno
Cultivating and Sustaining Biliteracy And Bilingualism in Multilingual Youth
Santa Clara University
$63,260

Contracted Services

Associated Students

Jane Zamora
CCAMPIS Grant 2021-2025
United States Department of Education
$423,243

Division of Administration and Finance

Office of Sustainability

Aaron Klemn
Recycling/Reuse Hotline and Website for Santa Clara County
City of Morgan Hill
$243,000

Division of Research and Innovation

Office of Innovation

Abby Queale
CSU Community Builder Grant
California State University, Long Beach Research Foundation
$7,500

The Spartan SBDC
California State Polytechnic University, Humboldt Sponsored Programs Foundation
$209,000

The Spartan SBDC (CIP) 22-23
California State Polytechnic University, Humboldt Sponsored Programs Foundation
$65,000

The Spartan SBDC (Federal - SBA)
California State Polytechnic University, Humboldt Sponsored Programs Foundation
$200,000

Office of Research

Richard Mocarski
Developing a Toolkit for Transgender and Gender Diverse-Affirming Health Communication: A Community-Based Participatory Research Partnership Approach
National Institutes of Health
$219,397

CONTRACTS, GRANTS, AND FELLOWSHIPS

Dr. Martin Luther King, Jr. Library

Mantra Roy, Jane Dodge, Carlie Lowe, Ann Agee, Michele Villagran, Karla Alvarez, Vidya Kilambi, Sylvia Ruiz, Hyokyung (Carrie) Hwang
BIPOC Become Librarians (BBL)
Institute of Museum and Library Services
$150,000

Lucas College and Graduate School of Business

Dean's Office

Hilary Nixon, Karen Philbrick
San José State University/Mineta Transportation Institute NSTI
California Department of Transportation
$55,522

Karen Philbrick, Hilary Nixon
MTI Database on Terrorist and Serious Criminal Attacks against Public Surface Transportation: 2022
Transportation Security Administration
$367,518

Senate Bill 1 (CSU Lead Center)
California State University System
$2,000,000

The Mineta Consortium for Equitable, Efficient, and Sustainable Transportation (MCEEST)
United States Department of Transportation
$2,000,000

Karen Philbrick
Mineta Consortium for Transportation Mobility (MCTM) TO 022
California Department of Transportation
$69,955

Mineta Consortium for Transportation Mobility (MCTM) TO 023
California Department of Transportation
$158,729

Office of the Provost

Division of Student Affairs

Maria Cruz
ASPIRE (Student Support Services) - San José State University - FY 2020-2025
United States Department of Education
$509,776

Maria Cruz, Martha Toral
The Ronald E. McNair Post-baccalaureate Achievement Program
United States Department of Education
$289,267

Office of the Provost

Vincent Del Casino, Feruza Amirkulova
ADVANCE Partnership: Kindling Inter-University Networks for Diverse (KIND) Engineering Faculty Advancement in the California State University System
California State University, Fresno
$25,290

Vincent Del Casino, David Parent, Liat Rosenfeld
Project Engineering Success: Increasing Hispanic Student Success in Engineering at San José State University, San José City College and Gavilan College
United States Department of Education
$995,708

Undergraduate Studies

Elena Klaw
CaliforniansForAll College Service Program (Planning)
California Volunteers
$130,685

CaliforniansForAll College Service Program (Planning)
California Volunteers
$1,110,000

CaliforniansForAll College Service Program (Planning)
California Volunteers
$120,000

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Katy Kao
Professor, Chemical Engineering,
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Annual Report

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